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FORBES, J.

ORIGINAL CASES

WITH DISSECTIONS AND OBSERVATIONS

ILLUSTRATING THE USE OF

THE STETHOSCOPE AND PERCUSSION

IN THE DIAGNOSIS OF

DISEASES OF THE CHEST;

ALSO

COMMENTARIES ON THE SAME SUBJECTS

SELECTED AND TRANSLATED FROM

AVENBRUGGER, CORVISART, LAENNEC

AND OTHERS.

BY JOHN FORBES, M. D.

PHYSICIAN TO THE CHICHESTER DISPENSARY.

Scipsi illa quæ sensuum testimonio inter labores et tædia iterum iterumque
expertus sum.

AVENBRUGGER.

LONDON:

PRINTED FOR T. AND G. UNDERWOOD, FLEET STREET.

1824.

ORIGINAL CASES

WITH REMEDIES AND OBSERVATIONS

ILLUSTRATING THE USE OF

THE STETHOSCOPE AND PERCUSSION



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CONSTATES ON THE SAME SUBJECT

COLLECTED AND TRANSLATED FROM

JAENBRUGER, CONVERSART, LAMNED

AND OTHERS.

BY JOHN THORPE, M.D.

TRANSLATED BY THE ENGLISH LITERARY

THE above work contains a full and complete description of the
diseases of the chest and lungs, and is a valuable
contribution to the literature of the subject.

LONDON:

PRINTED FOR T. AND A. HARRISON, WEST STREET.

1854

ILLUSTRISSIMO DOCTISSIMOQUE VIRO

R. T. H. LAENNEC, M. D.

MEDICINÆ IN COLLEGIO REGIO GALlico ET IN FACULTATE
MEDICA PARISIENSI PROFESSORI,

PATHOLOGORUM SUI TEMPORIS FACILE PRINCIPI,

AUSCULTATIONIS MEDICÆ

OPE STETHOSCOPII

EXCOGITATORI ET AUCTORI,

OPUSCULUM HOC EJUS LABORIBUS

APPRIME INNIXUM

ET INVENTI MAGNI UTILITATEM ILLUSTRANDI

STUDIO CONSCRIPTUM,

VENERATIONIS SUMMÆ TESTIMONIUM

ET AMICITIÆ PIGNUS

D. D. D.

JOANNES FORBES.

P R E F A C E.

IN Publishing the present volume, I believe that I am actuated by the very best motive which a medical man can alledge for becoming an author,—namely, the conviction that the work is wanted, and will be useful to the profession. No other motive, indeed, could have had sufficient weight, to induce me to come before the public with a performance so obviously and avowedly imperfect; and even this should not have been permitted to influence my conduct at this time, but for the additional consideration, that any advantages likely to be derived by the profession from a more finished work, would be greatly counterbalanced by the delay that must necessarily be incurred by its construction. The following pages, I am well assured, contain sufficient evidence to convince any candid enquirer, of the great value of the diagnostic measures which it is their object to recommend; and although there can be no doubt, that the additional experience of a few more years, might have enabled me greatly to strengthen this evidence, and to present it in a form, probably more agreeable to the reader, and certainly more creditable to the author, I should have only then attained the very same object (at least all that is really valuable in it) which I can at once secure by the present publication. Beside the positive injustice of withholding

from the profession, information which, I conscientiously think, it imports it to have, I conceive that there exists one other very powerful reason, for the speedy appearance of my little work ; namely, the presumption that the important subject of which it treats, will be more favourably received at the present moment, than it would be at a subsequent period. A few years since, when the work of M. Laennec was first introduced to the knowledge of the profession in this country, it appeared from the reports of the Medical Journals, and the unusually rapid sale of the Translation, that a very considerable impression had been made on the public mind, in favour of the diagnostic measures therein recommended. Since that time, however, if we may judge from the same Journals, the impression then made seems to have been productive of few practical results ; as I am not aware that even a single case, illustrative of the use of Auscultation, has appeared in any one of them. From this circumstance, and from not having heard of its employment in any hospital, or indeed by any individual practitioner in this country (with the exception of my friend Dr. Duncan, Jun. of Edinburgh), I am led to fear that the impression made was more lively than profound, and that through the influence of prejudice, theory and indolence,—one or all,—the greatest medical improvement of the present age, is in danger of sharing the fate of those thousand idle and useless projects which daily spring up among us, and which, after obtaining a temporary notoriety through the patronage of inexperienced and over-zealous individuals, soon sink into merited oblivion.

When I published, in 1821, my Translation of Laennec's invaluable work, I had but a very imperfect practical acquaintance with Mediate Auscultation, as a means of diagnosis, and was altogether a stranger to the employment of Percussion. Since that time, however, I have made much use of both these measures, especially the first, in my public and private practice ; and have thereby accumulated a very considerable mass of materials, illustrative of their employment ; and have also acquired, I hope, a tolerable degree of facility in practically

applying them to the diagnosis of diseases. It is to communicate to my medical brethren, some of the results of this experience, and thereby to recommend, in the most effective manner, the practice to their adoption, that I have undertaken the present task.

That the attention of the reader may be usefully bestowed on the series of cases which is here submitted to his inspection, it is absolutely necessary that he should also be made acquainted with the diagnostic measures, to the illustration of which these cases are principally devoted. As far as regards the Stethoscope, this task has, indeed, been already accomplished, by the publication of the *Treatise on Mediate Auscultation*. But as that work can scarcely now be procured, either in its original form or as translated, and as there is reason to believe that the present volume will come into the hands of many who have not seen the *Treatise* in question, it has been thought requisite to the utility of this publication, to include in it a brief outline of the principles and practice of Mediate Auscultation. As this outline is reprinted, with very inconsiderable alterations, from my Translation of that work, I only think it proper here to repeat what I have stated in the notice prefixed to it, that, though I consider this as sufficient to make the Cases intelligible to any one, I by no means reckon it sufficient to direct the practical application of Mediate Auscultation, or even to convey a just notion of its importance. To obtain both these objects, the treatise of M. Laennec must be not merely consulted, but studied. Beside my reluctance to swell unnecessarily the bulk of the present volume, I was unwilling to trespass on the indulgence of my readers by minute details, which many of them already possess, and which I hope, before long, to be able to lay before them in an improved form.* As some a-

* M. Laennec is preparing for publication a new and improved Edition of his *Treatise*, on the appearance of which I purpose giving a new Edition of my Translation,—the former being now out of print.

mends, however, for the scantiness of this outline, I have given, from the little work of Dr. Collin, in the Appendix, many details, which, I hope will be found useful in directing the practical application of the Stethoscope, as well as the other instruments of Physical Diagnosis.

Although the practice of Percussion be of much older date than that of Mediate Auscultation, I was well aware that the English reader stood more in need of information respecting the former than the latter. Feeling it necessary, for this reason, to give a full account of the principles and practice of this diagnostic measure; I soon came to the resolution of giving a translation of the original treatise of the discoverer of percussion, with a selection of the commentaries of Corvisart, as being the means most likely satisfactorily to attain the object I had in view. This I have done in the First Part of this volume; and I feel that, if I have executed this part of my task in a manner worthy of it, I have thereby conferred an important benefit on the medical literature of this country.

Independently of its high value as being the original record, and even at this day still the best record, of the principles and practice of percussion, this little treatise merits the regard of practitioners for the numerous original and profound pathological truths and descriptions contained in it. That there are in it both false theory, and incorrect opinions relating to matters of fact, I am well aware; but that it contains also many sterling truths, and several, the discovery or perfection of which has been attributed to more modern writers, I am equally well assured. Indeed, when it is recollected that the work of Avenbrugger was published upwards of sixty years since, and especially when we compare it with most others of the same date, we cannot do otherwise than consider it as one of extraordinary merit. Of the value of the diagnostic measure, first promulgated in it, I shall have occasion to speak hereafter; but considering this, as I do, with Laennec, as one of the greatest discoveries ever made in medicine, I cannot help, in

this place, recording my astonishment at the reception which it has met with from the profession, and more especially in this country. With these opinions and feelings relative to the character and fortunes of Percussion, I hope I may be forgiven, if I here add a few words more respecting it and its discoverer.

Of LEOPOLD AUENBRUG or AVENBRUGGER himself, I have been able to obtain but little information. He was born at Graets in Styria, in 1722, graduated at Vienna, and afterwards became physician in ordinary, of the *Spanish Nation*, in the Imperial Hospital in that City.* In Ersch and Puchelt's *Literatur der Medicin*, besides the treatise on Percussion, he is recorded as the author of two works on subjects relating to *Madness*; and in the *Biographie Medicale* he is further said to be the author of a *Drama*, and to have published on *Dysentery*. In the *Literatur*, he is stated to have lived till 1809. If this be correct, and its correctness, I presume, can hardly be questioned, it seems very singular that the *In-ventum Novum* should be the only thing published by him on the subject of his great discovery, or on that class of diseases, on which it threw so much light. This work was first published in 1761; but it appears to have made but a slight impression in Germany. We are told by Sprengel that the observations of Avenbrugger are partly confirmed in a work by Isenflamm, published in 1773; and we further find both the treatise on Percussion and its author, commended by Stoll (Ephem. 1779). It however seems that the practice of percussion has been greatly neglected in the country which gave it birth.†

Its fortunes were better in a neighbouring kingdom. Avenbrugger's Treatise was translated into French, by Roziere, as early as 1770, but appears to have drawn little attention at that time. Indeed, percussion seems to have been

* Corvisart's Title-page.

† Sprengel. Hist. de la Med. T. vi. p. 27.

altogether unknown practically in France until introduced by Corvisart (about the year 1788), when it was enforced by his precept and example.

After twenty years' experience, this distinguished physician finally established the practice on a firm and lasting foundation, by means of his translation of, and admirable Commentary on, the neglected original treatise of Avenbrugger. Corvisart's work was published in 1808; and by means of it, and through the example and lectures of this great man, the practice became extensively diffused over France; and for many years past it has been considered by every intelligent practitioner, more especially in Paris, as a common and indeed indispensable measure in studying diseases of the chest. To Avenbrugger alone belongs unquestionably the honor of the discovery of Percussion; but it is to its reviver and second founder, Corvisart, that it is almost entirely indebted for the present rank and estimation which it has obtained.

I need hardly inform the English reader, how very slight an impression was made in this country either by the original treatise of Avenbrugger, or Corvisart's excellent Commentary; since, I think, the probability is, that to the majority of those who may peruse these pages, even the name of the discoverer of percussion is unknown; while still fewer of them have seen practised the diagnostic measure which must (nevertheless) render that name immortal. Dr. Cullen, in his account of Hydrothorax, in the First Lines (MDCCLII.), just alludes to percussion, as a practice with which he is personally unacquainted. Dr. Young, also, in his Treatise on Consumption, p. 22, briefly notices it; but his account of it does not occupy more than half a page. It is not even named in Parr's Medical Dictionary, nor in the greater number of the elementary or systematic works, which profess to give, and commonly do give, the existing state of theory and practice at the period of their publication,—e. g. Dr. G. Gregory's excellent Compendium, and Dr. Good's voluminous System. It is, however, named in Thomas's popular work; and in a small volume

just published, on the subject of Diagnosis, it is mentioned in a manner sufficiently characteristic of the degree of information respecting it, which prevails in this country. "Foreign physicians (says this writer) are of opinion that much knowledge of the nature of affections of the lungs may be derived from the percussion of the Thorax; and for the purpose of conveying the sound they employ a peculiar instrument."* In this sentence it is evident that the author confounds together Percussion and Mediate Auscultation.

In determining to give an English dress to the treatise on Percussion, it became a matter of consideration whether to present it in its original quaint form, of Observation, Axiom, and Scholium; or, by melting down and remoulding it, together with the French commentary, to give to the whole the appearance of a new work both in manner and matter. By adopting this plan, there is little doubt, I think, that I might have produced a more agreeable and more *readable* performance; though I question whether I could have rendered the subject clearer or more impressive. But against this proceeding, were there no other reasons, I think those so honorably adduced by Corvisart, for a similar forbearance on his part, are all-sufficient, and indeed unanswerable. His words are—"Sachant bien le peu de gloire dévolu à presque tous les traducteurs, comme au très grand-nombre des commentateurs, j'aurais pu m'élever au rang d'auteur en refondant l'œuvre d'*Avenbrugger*, et en publiant un ouvrage sur la percussion. Mais, par-là, je sacrifiais le nom d'*Avenbrugger* à ma propre vanité; je ne l'ai pas voulu; c'est lui, c'est sa belle et légitime découverte, (*inventum novum*, comme il le dit justement) que j'ai voulu faire revivre, Heureux, si je contribue seulement à en faire sentir l'importance, et si les praticiens scrupuleux ne dédaignent point d'ajouter à beaucoup de signes infidèles, un moyen plus sûr de s'éclairer dans la recherche de la plupart des affections de la poitrine." Pref. p. XIII.

* Buchan's Symptomatology, p. 36.

I fear I cannot, with justice, extend the same commendations to the manner as to the matter of my author's treatise; as it is certainly written in no very classical style of latinity, and is, moreover, occasionally not a little obscure. In two or three places, I am by no means sure that I have given the true meaning of the author, more especially where I have thought it necessary to adopt a different interpretation from that of Corvisart.

The mere fact of the publication of the present volume, is sufficient proof of the high importance attached by me to the diagnostic measures which it is its object to recommend. I think it, however, necessary, in this place, to state more explicitly the judgment which I have been led to form of them from my own personal experience. I have already said that, during the last two years and a half, I have been in the habitual employment of Auscultation and Percussion (more especially the former), in my public and private practice, and in a pretty extensive field; and I can most conscientiously add, that the additional experience of every successive month and week, has only tended to increase more and more the confidence previously reposed in them. If I may be allowed to judge from the benefit which I have myself derived from them, in all the departments of medicine; in pathology, diagnosis, prognosis, and treatment; I cannot but consider their general adoption by the profession in this country, as an event to be most ardently desired, and their comparative rejection hitherto, as a circumstance to be much deplored. The whole question respecting the propriety of adoption or rejection, lies in narrow compass, and is of most easy decision. It is simply, whether a more correct, more certain, and more minute diagnosis of many of the diseases of the chest, than can be obtained by means of the common symptoms and modes of investigation, be desirable or not? I presume it will be admitted by every intelligent and experienced practitioner, that the diagnosis of many diseases of the chest (as indeed of those of every important organ of the body) is often a matter of extreme difficulty; and that

doubts very often, and mistakes not seldom, as to their real character, are things of daily observation, in the practice of even the most skilful. That the general adoption of the diagnostics recommended in this volume, would remove all these doubts, difficulties, and mistakes, I am very far from believing; but that it would remove *some* of them, and lessen others, I cannot possibly doubt. Indeed, the superior certainty and precision of diagnosis afforded by the Stethoscope and Percussion, in many diseases of the chest, is so much a matter of simple fact, and can be so easily demonstrated in practice, that it would be idle to attempt to prove the thing by reasoning. For more than one instance of this kind, I hope I may be allowed to refer to the Cases in the present volume. At least, I can safely say, that the degree of precision of diagnosis obtained in several of these, could not have been attained by me, whatever it might have been by others, without the aid of the physical diagnostics employed. Any objections, therefore, that can be made against the adoption of these in practice, must apply to the *utility* of the minute diagnosis obtained by them, and not to their specific fitness to supply it. And as it is, I apprehend, with objections precisely of this kind, that they have to contend, I deem it necessary, in this place, to make a few cursory observations on the subject.

Respecting minute diagnosis, it is said that, in most curable diseases, it is useless, because the same treatment applies to the greater number of those likely to be confounded; while in incurable diseases, it is obviously useless, because in them all treatment is equally unavailing. These objections seem, at first sight, pertinent; but I conceive they are more of apparent than real strength.

The history of every science shows, that, generally speaking, every addition of knowledge has been an increase of power; and innumerable discoveries could be mentioned, which, at the time they were made, seemed of no value, but which eventually proved of the greatest importance. Many striking illustrations of this truth could easily be adduced from the history of Medicine. On this principle alone, then, were

there no other reason, I would maintain the utility and importance of a minute diagnosis. I admit that this precise discrimination of different diseases, or of their different shades and stages, may not, at present, increase our power of curing or relieving many of them, even in the slightest degree : But who shall assert that this will always be the case ?

But I contend, further, that accurate and minute diagnosis is highly valuable in itself, and for itself alone ; and deserving the utmost regard of the practitioner, even if it should neither confer on him any present superiority, nor yet hold out any prospective advantages to medicine. This will, perhaps, hardly be understood by those, who are content to exercise their profession, merely as an art or trade ; in whose routine system, a happy ignorance precludes alike the apprehension of doubt and difficulty ; and who are equally strangers to the higher pleasures and pains of practice. To the great majority of my readers, however, who cultivate their profession with the philosophic spirit, zeal and disinterestedness, which the most comprehensive and beneficial of the sciences demands, I trust it is unnecessary to enlarge on the value of the satisfaction which results from certainty, or the misery that springs from doubt. To treat a disease, with the nature of which we are unacquainted, especially if it be of any severity, is, at least, always unpleasant, often extremely painful ; and the satisfaction derived from the casual recovery of a patient, under such circumstances, is very different from that which accompanies a cure, which, if we have not produced it, we can, at least, understand,—which we may perhaps have foreseen,—and which, certainly, we have not protracted.

Indeed, I am sometimes disposed to doubt, whether the untoward event of a disease, which his science had enabled him to predict, and which he had assiduously endeavoured to avert with all the resources of his art, is not productive of more real satisfaction (as it certainly is more creditable) to the philosophic practitioner, than the recovery of a patient, of the nature of whose disease he is ignorant.

But I am far from admitting that the benefits of minute

diagnosis are confined to these negative advantages. On the contrary, I maintain this to be highly useful and important, in the actual practice of medicine,—in prognosis and treatment; and in incurable, as well as curable diseases.

In respect of the important subject of *Prognosis*,—by the practical application of his knowledge of which, probably, the skill of the physician is more frequently judged of, than by any other circumstance,—it may be stated as generally true, that those prognostics can alone be depended on which are founded on the practitioner's acquaintance with the natural history of the disease before him; that is to say, its seat, nature and character, as ascertained by obvious symptoms, or by any other means in our power, and its usual progress and termination. By this remark, I am far from wishing to condemn as useless, the more common system of prognosis, which, under the guidance of experience, attempts to judge of the event of diseases from the symptoms only, without endeavouring to look through and beyond them, at the actual pathological state, of which they are, at most, the attendants, and frequently but the accidental attendants. I mean merely to assert, that any system of prognosis, derived exclusively from such a source, must always be unsatisfactory, and must frequently lead into error; and can be safe or useful only, when combined with, and considered merely as accessory to that other kind which is based on the knowledge of pathology. If then it be true, as I maintain it is, that the diagnostic measures which we have been considering, bring us, in very many instances, to a closer and more precise acquaintance with the actual pathological condition that exists in any particular case, it follows as a necessary consequence, that our prognosis, in every such case, must be thereby directly and greatly improved.

To adduce a very common case in illustration:—Suppose two physicians of equal skill and experience, but only one an Auscultator, met in consultation, for the first time, on a case of Chronic Pleurisy or Peripneumony, in no very advanced stage. Probably the only remarkable symptoms are, a

violent cough with little or no expectoration, more or less dyspnoea, especially on motion, and incapacity to assume, with comfort, certain postures; the pulse perhaps is natural, there is no pain, no febrile heat, no hectic, and inconsiderable loss of flesh; or, perhaps, one or other of these states may exist. From these general symptoms, will he who is not the Auscultator venture to pronounce, with any degree of confidence, his opinion of the precise nature of the disease; much more, to declare it to be one that will almost certainly prove fatal, and scarcely even admit of relief from any kind of treatment? No practitioner, I affirm, judging from the common symptoms only, can be justified in entertaining such opinions. But if, to the examination of the symptoms, be superadded the exercise of percussion, or the exploration by the stethoscope, for only two or three minutes; and if the former elicits the preternatural or fleshy sound over the whole of one side of the chest, or the latter indicates the absence of respiration over the same space; then, at once, are obtained sufficient materials (conjointly with the previous history and present symptoms of the case) to form a correct diagnosis, and to justify and authorise the most ominous prognosis. Were the benefits of Auscultation confined to this single case of disease, it would, even then, be entitled to the highest consideration.

In respect of the Treatment of disease, the same line of argument, and nearly the same observations, apply. As no empiric, however experienced or learned, can ever be a faithful or consistent prognosticator of the event of diseases, so neither, for the same reasons, can he be a consistent or generally successful practitioner. And as the true pathology of existing diseases can only be known by means of a just diagnosis, it necessarily follows that this latter is essential to good practice. But we have already seen that in the case of many of the diseases of the chest, a true diagnosis cannot be obtained without the aid of Auscultation and Percussion. And in point of fact, and speaking from observation, I scarcely think that there is one of the numerous affections to which this cavity is

subject, in which the minute diagnosis in question is not more or less beneficial in practice. In the more prominent instance of Empyema and Hydrothorax, in some examples of which, perhaps the operation of paracentesis is the only measure left from which we can expect any relief, it is needless to point out the immense advantage of this kind of diagnosis; since it is often from this alone that we can derive any certain knowledge—not merely of the particular site, but even of the very existence of the fluid to be evacuated. (See the Remarks on Case xxv, p. 215, and the Observations on the operation of empyema, p. 257.)

In regard to the objections that have been made to physical diagnostics, on the score of their being solely or chiefly applicable to incurable diseases, or to the last and nearly hopeless stages only, of such as are curable, it may perhaps be sufficient to refer to what has been said above, of the superior advantages of the former, in *all* diseases of the chest. But as I am further of opinion, that these advantages extend to the Treatment also of incurable diseases, I think it necessary to add a few words on the subject, in this place. It is of no slight importance to the sufferer from an incurable malady, that the medical attendant understands the nature of it, and knows it to be incurable. This knowledge will, at least, prevent the employment of painful, disagreeable, or merely useless remedies; and, what is of yet greater consequence, will forbid the use (otherwise very likely) of measures which might aggravate the symptoms or precipitate their course. Besides, there is no disease, however hopeless, of which there is not a right and a wrong treatment, and which does not admit of some mitigation, if not suspension, when managed according to the dictates of experience and sound pathology. The observations formerly made, when speaking of diseases generally, on the possibility of these becoming eventually more under the power of remedies; the comfort and satisfaction to the physician of knowing the nature of the affections he is treating; and the in-

finite importance, practically, of being able to pronounce a correct prognosis; are, of course, equally applicable to the most incurable diseases.

In respect of the other class of cases; if it were even true, which it is not, that our physical diagnostics took cognizance only of the latter stages of organic affections, they would still, even in this limited sphere of operation, be of great value. In the early stages, the Auscultator would have, at least, all the advantages possessed by other practitioners, while in the latter stages, he would have many more. Besides, it need scarcely be said how frequently it happens, more especially to physicians, that the latter stages of diseases are the only ones which the practitioner has an opportunity of observing.

I hope it will not be inferred from the preceding observations, that I am disposed to overrate the importance of pathology or diagnosis; or the powers of the measures employed to acquire the knowledge of these, in actual practice. All that has been said in relation to diagnosis, prognosis and treatment, I wish to be understood merely *comparatively*, and as applicable to states rather of comparative ignorance than knowledge.

Every practitioner, I presume, of common experience and common candour, must have received too many lessons from his own doubts and errors, not to be impressed with the unsurmountable difficulties and uncertainties that surround the whole subject of practical medicine, or to run any risk of indulging in Utopian dreams of attainable perfection in it. At the same time, I trust, no one need be ashamed to confess that he hopes and believes that both the science and practice of medicine will become eventually more perfect than they are at present; or to feel assured that it is principally from the decrease of empiricism, and the assiduous and legitimate cultivation of pathology, that such improvements as are attainable, may be expected.

And as directly bearing on this subject, I must here be

permitted to make a few remarks on certain incorrect and partial views of pathology entertained by some practitioners, lest I should be accused of abetting the very error, which I feel myself called upon to censure. I allude to the disposition evinced of late years, of looking to the result of diseases, rather than to diseases themselves; or rather, of regarding diseases as constituted by the more striking phenomena of their last stage, and by the appearances on dissection, than by the phenomena of their whole course. This mode of judging of the character of diseases, is scarcely more just than would be that of the biographer, who should draw the character of his hero from the last act of his life only, without any regard to his previous conduct.

The error in question is, perhaps, a very natural result of the great progress that has been made of late years in the pathology of organic diseases, and of the much greater prevalence of the practice of examining dead bodies. It is, however, not the less injurious on this account. The truth unquestionably is, that there are many diseases, of the pathology of which we are entirely ignorant; and there is every reason for believing, that not a few of these, if really consisting in any change of organic structure, are of such a nature as will never be exhibited beneath the knife of the dissector. Nay more, it is certain that, even in those diseases with the pathology of which we seem to be well acquainted, almost all our beneficial practical efforts must be directed to a state of parts which preceded that which we see in the dead bodies of our patients. It is indeed, with me, I confess, a matter of considerable doubt, whether we are not accustomed greatly to overrate the powers of our remedial agents, to remove diseases that consist in any considerable physical alteration of an organ; and whether, in our attempts to do so, we do not sometimes establish the morbid state, by interfering with the remedial powers of nature, which, perhaps, are alone capable to effect the wished for change. It has been a similar conviction, on their part, I presume, that has obtained for some of

the most eminent professors in our art, the character of feeble and routine practitioners. It is this which has led some of the most distinguished pathologists to lean towards the creed of medical fatalism ; and may be partly the cause of entailing on the French practice of medicine, generally, at least in the estimation of the practitioners of this country, the reproach of indecision and imbecility. Taking into consideration the whole course of diseases, I should be sorry to be thought the apologist, much more the advocate of this timid and expectant system ; and I fear our continental neighbours are much to blame for their inactivity in the earlier stage of diseases ; but I cannot help fearing, that the irrational vigour of some British practitioners, in the latter stages, may almost counter-balance their beneficial activity in the former ; and that thus the accounts between the two may come, in the end, to be nearly balanced.

The practical conclusion from all this ought to be, not to disregard pathology, but only to cultivate it in a more philosophic spirit. To derive benefit from our dissections, we ought quite as much to reflect on what was the cause and early character of the organic change which we see consummated, as to study the actual nature and final amount of this change. Without this retrospective ratiocination, and practical dedication of his researches, the morbid anatomist is more an artist than a physician ; and his devotion to science is, to use the language of Bacon, rather idolatry than true worship.

It is obvious that this view of the subject does not materially lessen the importance of the diagnostic measures, which it is the object of this volume to recommend ; although the most conspicuous evidence of their powers, is certainly found in that stage of diseases, wherein I have accused the comparative impotency of medicine.

In like manner, I would wish to guard against the danger of overrating the extent of applicability of the stethoscope in practice ; the extent of its diagnostic powers where applicable ; and the degree of confidence to be reposed in its

positive results. From my own experience I should be disposed to believe, that in the greater number of the more recent inflammatory affections, auscultation might be dispensed with, because, in such cases, the common symptoms are, in general, sufficient to regulate the practice ; although I must admit, that percussion and the stethoscope would, even here, render our judgement and practice, in many cases, more satisfactory and certain. In all diseases, however, which are essentially chronic, in acute diseases which have become so, and in all cases of a doubtful nature, whether of a long or short standing, I should deem the *trial*, at least, of these measures, to be almost indispensable.

In having recourse to these, however, in any case, I would earnestly caution the inexperienced, not to be too forward in forming a diagnosis from the results furnished by them. It is highly proper and necessary that it should be generally understood, that the practice of auscultation, &c., although easily acquired by care and attention, is not to be acquired (in such a degree of perfection as to be useful), without these, and without considerable experience. And I would advise every one to be extremely cautious in drawing from his explorations, any conclusions which are to influence the treatment of diseases, until he has been able to convince himself thoroughly of the correctness of these, by a good deal of experience, and, if possible, by the unerring testimony of dissection.

The reason of this caution will be obvious on considering the relative characters of the physical, and the common, or sympathetic diagnostics. In general, we depend so little on any *one* symptom of a disease, that we seldom risk any momentous treatment, or hazard a decided prognosis on it ; and, therefore, it is not a matter of very great consequence, practically, whether we are right or wrong respecting its supposed import in any individual case. It is very different, however, with many of the indications furnished by mediate auscultation or percussion. To such persons as admit their authority, these carry with them the conviction of almost physical demon-

stration; and it is impossible not to yield to opinions founded on such a basis, assent of a very different kind from that which follows the contemplation of a mere sympathetic symptom. We may deem lightly of a quick pulse, or a hurried respiration, or an acute pain, because we know that all these may accompany an affection of the most temporary kind, and of no danger; but when we know that the fleshy sound, or absence of respiration, over one side of the chest, can only arise from a great organic change, it is impossible that we can regard such a sign but as one of the highest consequence, and as worthy to determine our prognosis, and direct our practice. I would therefore advise the young auscultator, not to act upon his earlier explorations, unless the practical indications furnished by them accord with those which are supplied by the common symptoms. A little learning, may, in this case, be truly a dangerous thing. I am even disposed to recommend some degree of the same caution to the most experienced; since I think it may be laid down as an axiom, that in proportion as we consider our diagnostics certain, ought we to be cautious not to misapply or misconceive them.

After these remarks on the general subject to which this volume is devoted, and on those parts of the work derived from external sources, it will be expected that I should say something, in this place, relative to the nature and form of that portion of it, for which I am exclusively responsible.

It will be seen, by a reference to the Table of Contents, that the Cases consist of Diseases of the Heart and Pericardium, Chronic Pleurisy, Hydrothorax, Chronic Peripneumony, and Asthma. With one or two exceptions, I have excluded all the more acute inflammatory affections, and have altogether omitted cases of Phthisis. Of the particular selection and exclusion made, I do not know that any other explanation is necessary, but the general one, that it was never my intention to give examples of *all* the diseases of the chest. I may say, however, that the particular choice made, was directed partly by the relative frequency of

diseases, and partly by the desire of giving such cases as were, at once, interesting from their general character, and best calculated to promote the main object of the work. Another reason has operated in diminishing the number of the diseases noticed, as well as cases, viz. my wish to keep the volume within certain bounds. When I began printing the cases, I did not expect that they would be nearly so voluminous, as they proved to be; and when I found that those devoted to the diseases of the heart took up so large a portion of my allotted space, I decided, at once, to omit many others which I originally intended to publish. This determination led me to suppress nearly all the examples of recent inflammations which I had prepared, and the whole of those of Consumption. I made this sacrifice (the reader may not think it one) the more willingly, because my experience had been much less extensive, and also less satisfactory (perhaps because less extensive), in acute than in chronic diseases; and because, in phthisis, the results furnished by the new diagnostic measures, although sufficiently satisfactory, and consistent with the doctrines of Laennec, appeared to me of very inferior practical value, inasmuch as they were obtained only when the disease had reached a hopeless stage (if, indeed, all its stages are not hopeless), and when, moreover, the same results were furnished by the ordinary symptoms.

In looking at the imperfections conspicuous in almost all the Cases contained in this volume, of which no one can be more sensible than the writer, I confess it to be a subject of just regret, that the task of disabusing the mind of the medical profession in this country, in respect of the value of the stethoscope and percussion, has not fallen to the lot of some one better qualified than myself, both by his abilities and opportunities. In Hospital practice, it is obvious that much greater justice could be done to the subject, than either in private or Dispensary practice; as, in all cases, the hospital physician can have the disease constantly under his eye during the life of the patient; and, in most cases, when the event has been fatal,

he can bring the evidence of dissection to confute or confirm his judgements. In regard to this latter circumstance, however, I think it due to the good sense of the lower classes in this country, to declare it as my own opinion, that there is much less difficulty in obtaining permission to inspect dead bodies, than is commonly imagined. In proof of this, perhaps, I may be allowed to instance the dissections recorded in this volume, together with many more,—all performed (with two exceptions) by myself, in a provincial situation, in private houses, and within a period of little more than two years.

It is more especially in a comparison with those of M. Laennec, that the deficiencies of my cases will appear; and had it not been from a conviction produced by my own observation, and strengthened by the concurring opinions of many friends, that, in the present state of the public mind, *original English Cases* are absolutely necessary to produce the proper impression in favour of the stethoscope, I should never have presumed to publish my own at full length, while the greater number of M. Laennec's are still untranslated, or only given, in my translation, in a greatly abridged form.

Although I am well assured that almost all the records of disease in the present volume are deficient in many essential points, I think it probable that my readers (they more especially who have not previously studied the subject of Auscultation) will be more disposed to condemn the extreme prolixity of my cases, than to blame their incompleteness. To the charge of prolixity, as well as of defectiveness, I must plead guilty; but I can exculpate myself from the former much better than from the latter. In publishing my cases, I felt that the diagnostic measures employed in them must be new to the greater number of my readers, and that it was, on this account, absolutely necessary, that the detail of these should be as full as possible; that it should be, in fact, such as constituted the identical grounds on which I myself (a scholar like them) had come to the conclusions therein recorded, respecting the nature and event of each particular case. And I would fain

hope, that the cases will be to my readers, what they have been to me, not merely proofs of the value of the diagnostic measures therein recorded, but studies, from the examination of which they may be able to decide, whether the conclusions drawn are just, and also themselves to draw others, as from actual explorations of the living subject. Keeping this general principle in view, then, I think that although many of the stethoscopic details may seem unnecessarily minute, in reference to the individual case in which they occur, they will not be found to be useless in relation to this more important object. I am well aware that such lengthened reports cannot be interesting; but if I had not considered them as highly useful, not to say necessary to the furtherance of the important object of this work, they certainly should not have appeared in it.

It may, perhaps, be thought likewise, that many of the general histories are unnecessarily minute. I hope however, that this can also be satisfactorily accounted for. Deeming the greater number of the cases interesting in themselves, as specimens of pathology,* I was desirous of making the account of their general history and symptoms sufficiently complete to render them as useful as such observations usually are, independently of any *peculiarities* in their diagnostic details. And I was, perhaps, in some respects, even more than usually minute, from a wish to exhibit the relative character and value of the physical and the common diagnostics, in specimens respecting the positive nature of many of which there could be no doubt. And this—not with the view of raising the one at the expence of the other; but in the simple desire of discovering the truth. For, however partial to the use of the Stethoscope and Percussion, I must here and everywhere avow my conviction of the propriety and necessity of attending, in every case, to the

* It will be seen that I have introduced several Cases entirely on this account, and which have little or no connexion with the subject of the peculiar diagnostics recommended in this volume.

general symptoms also. Indeed, I look upon it as the great recommendation of the stethoscope, and the other instruments of physical diagnosis, that they are *additional* to the common means, and not in any degree *exclusive* of these ; so that, as I formerly observed, the employer of the new measures can, in no case, be injured by them, while in many he may be benefited.

That a master of auscultation will find many other imperfections in the Cases, I do not doubt. I think it even very possible that some of the examples of my recorded Diagnosis may be at variance with the explorations on which they are founded. I do not know that any such discrepancy really does exist ; but I own I shall be neither surprised nor hurt, if it should prove to be the case. The correctness of the explorations I can certainly vouch for, as the simple records of observed phenomena ; but I am by no means prepared to say that my conclusions drawn from these, have always been correct or legitimate. I trust, however, that my avowed character of a scholar, will screen me from some of the blame that might properly attach to similar delinquencies in the work of an avowed professor. In justice to myself I must say, that I cannot accuse myself of wilful negligence or want of reflection. I have been most anxious to learn ; and hope I have not been mistaken in supposing that the surest way of instructing others, was to lay before them the very lessons, literally transcribed, from which I have myself derived the knowledge I possess. It is certainly one of the disadvantages of mediate auscultation, that it requires much time and trouble to enable one to acquire even a moderate degree of adroitness in the practical application of it. For these reasons, I must request such of my readers as may meet with any of the defects alluded to, to consider them rather as owing to the unskilfulness of the artist, than to any unfitness in the materials. I would only further ask, that a judgement of the work may not be formed from any detached portion of it, but from the combined effect of the whole. In this case, however little credit may re-

dound to the advocate from the scrutiny, I have no apprehension for the triumph of the cause.

As the greater part of the present volume was written under somewhat peculiar circumstances, perhaps I may be permitted, before I conclude, to say one word on a subject which it is commonly deemed unnecessary to notice in a practical work like this. I allude to the style. As every exploration recorded in the volume was made by myself, so was every case written by me, either in the presence of the patient, or immediately after the examination; and generally in great haste. Under such circumstances, it was hardly to be expected that the language should be always correct, much less good; but, on the contrary, that there should be much sameness of expression, frequent repetitions, and occasional tautology. In transcribing the cases for the press, I was unwilling to alter, in any considerable degree, the original records; for fear of conveying, by new expressions, other, or less clear ideas, than would be communicated by those (however inelegant) which were suggested by the immediate presence of the objects. I make this remark principally, because by much the greater portion of this work is of the above character; and because I should be sorry to be considered as wilfully assisting in lowering the literary character of the profession.

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EXPLANATION OF THE PLATES.

PLATE I. The Stethoscope.

II. and III. Contraction of the Chest.

On Percussion of the Chest:

BEING A TRANSLATION OF

AVENBRUGGER'S ORIGINAL TREATISE,

ENTITLED

“ INVENTUM NOVUM EX PERCUSSIONE THORACIS HUMANI, UT SIGNO,
ABSTRUSOS INTERNI PECTORIS MORBOS DETEGENDI;”

AND OF

A SELECTION OF THE MORE IMPORTANT

COMMENTARIES OF CORVISART

ON THAT WORK:

The former first Published in 1761, the latter in 1808.

Expertus affirmo, quòd signum, de quo hic agitur, gravissimè momenti sit, non tantùm in cognoscendis, sed etiam curandis morbis : atque ideò primum locum mereatur post explorationem pulsûs et respirationis. Enim verò, in quocumque morbo praeternaturalis sonus thoracis observatus fuerit, majus esse periculum indicabit semper. AVENBRUGGER.

L'auteur semble craindre qu'on méprise, ou qu'en tourne en ridicule ce procédé : mais quel serait le médecin assez léger, ou trop prévenu, pour se refuser à un moyen qui porte avec lui une conviction complète, fondée sur un phénomène physique, à l'abri de l'erreur et de toute illusion ? Quel homme raisonnable et desireux des progrès de son art, hésiterait de recourir à ce procédé, dans la foule de ces maladies obscures, où toutes les ressources de la symptomatologie sont si souvent infidèles, et sur la nature desquelles, la percussion seule peut jeter une vive lumière, en faisant connaître le véritable état des organes de la poitrine. Pour moi, convaincu d'après une expérience répétée, depuis plus de vingt ans, non pas seulement de l'utilité, mais de l'indispensable nécessité de la percussion du thorax dans un très-grand nombre d'affections aiguës et chroniques, je ne puis croire qu'on néglige à l'avenir un moyen si précieux, et j'ai la conscience, qu'en publiant, à cet égard, mes observations, j'enrichis l'art de connaissances positives ; je rends hommage au travail trop oublié d'un médecin estimable, et je pense que les hommes qui cultivent avec zèle la médecine, en tireront un parti fort avantageux pour le bien de l'humanité.

CORVISART.

La percussion de la poitrine est, sans contredit, l'une des découvertes les plus précieuses dont la médecine se soit jamais enrichie. Elle a soumis au jugement immédiat des sens, plusieurs maladies que l'on ne reconnaissait jusque là qu'à des signes généraux et équivoques, et en a rendu le diagnostic aussi sûr que facile.

LAENNEC.

THE AUTHOR'S PREFACE.

I HERE present the Reader with a new sign which I have discovered for detecting diseases of the chest. This consists in the Percussion of the human thorax, whereby, according to the character of the particular sounds thence elicited, an opinion is formed of the internal state of that cavity. In making public my discoveries respecting this matter, I have been actuated neither by an itch for writing, nor a fondness for speculation, but by the desire of submitting to my brethren the fruits of seven years' observation and reflexion. In doing so, I have not been unconscious of the dangers I must encounter; since it has always been the fate of those who have illustrated or improved the arts and sciences by their discoveries, to be beset by envy, malice, hatred, detraction and calumny. This the common lot, I have chosen to undergo; but with the determination of refusing to every one who is actuated by such motives as these, all explanation of my doctrines. What I have written I have proved again and again, by the testimony of my own senses, and amid laborious and tedious exertions;—still guarding, on all occasions, against the seductive influence of self-love.

And here, lest any one should imagine that this new sign has been thoroughly investigated, even as far as regards the diseases noticed in my Treatise, I think it necessary candidly to confess, that there still remain many defects to be remedied,—and which I expect will be remedied—by careful observation and experience. Perhaps, also, the same observation and

AUTHOR'S PREFACE.

experience may lead to the discovery of other truths, in these or other diseases, of like value in the diagnosis, prognosis and cure of thoracic affections. Owing to this acknowledged imperfection, it will be seen, that, in my difficulties, I have had recourse to the Commentaries of the most illustrious Baron Van Swieten, as containing every thing which can be desired by the faithful observer of nature; by which means I have not only avoided the vice of tedious and prolix writing, but have, at the same time, possessed myself of the firmest basis whereon to raise, most securely and creditably, the rudiments of my discovery. In submitting this to the public, I doubt not that I shall be considered, by all those who can justly appreciate medical science, as having thereby rendered a grateful service to our art,—inasmuch as it must be allowed to throw no small degree of light upon the obscurer diseases of the chest, of which a more perfect knowledge has hitherto been much wanted.

In drawing up my little work I have omitted many things that were doubtful, and not sufficiently digested; to the due perfection of which it will be my endeavour henceforth to apply myself. To conclude, I have not been ambitious of ornament in my mode or style of writing, being contented if I shall be understood.

December 31, 1760.

NOTE BY THE TRANSLATOR.

In the following Treatise, the text of the original author, AVENBRUGGER, is distinguished by having prefixed to the different axioms or paragraphs, either the Roman or Arabic numerals, or the word SCHOLIUM, and by being, in the technical phrase, *set out* beyond the *Commentary*. This latter has the abbreviated title (*Comm.*) prefixed, and is *set in*. The whole of the Commentaries are taken from Corvisart, with the exception of those few to which ¶ is prefixed, and the abbreviation TRANS. subjoined. These have been added by the Translator. J. F.

ON PERCUSSION OF THE CHEST.

FIRST OBSERVATION.

Of the natural sound of the Chest, and its character in different parts.

I. THE thorax of a healthy person sounds, when struck.

SCHOLIUM. I deem it unnecessary to give in this place, any description of the thorax. I think it sufficient to say, that by this term I mean that cavity bounded above by the neck and clavicles, and below by the diaphragm: in the sound state, the viscera it contains are fitted for their respective uses.

Commentary. The method of *Percussion* is founded on the property possessed by the human thorax, in common with most hollow bodies, of giving out certain sounds when struck in a particular manner.

II. The sound thus elicited (1.) from the healthy chest, resembles the stifled sound of a drum covered with a thick woollen cloth or other envelope.

Comm. This illustration gives a good idea of the kind

of sound; of course, the intensity is very different in the two cases.

III. This sound is perceptible on different parts of the chest in the following manner :

1. On the right side anteriorly it is observed from the clavicle to the sixth true rib; laterally, from the axilla to the seventh rib; and posteriorly, from the scapula to the second and third false ribs.

Comm. This paragraph is not rigidly exact. Disease of the liver, or other abdominal organs, by encroaching on the chest, will sometimes contract the sonorous sphere, as above described. It is necessary, therefore, to attend to the state of the abdomen, the previous history of the case, &c. before we form our judgement.

2. The left side yields this sound from the clavicle to the fourth true rib, anteriorly; and on the back and laterally, in the same extent as the other side: over the space occupied by the heart the sound loses part of its usual clearness, and becomes dull.

Comm. It is not quite correct to say that the left side yields the sound only as low as the right. On the contrary, it is generally perceptible over the corresponding space occupied by the liver, but depends in this case, upon the presence of the stomach or colon, containing air, &c. The sound obtained by percussion of the cardiac region varies extremely in different persons. In those spare persons with a weak pulse &c., and in whom the organ is probably small, the sound is scarcely at all altered in the region of the heart; while in others of opposite temperament and habit, it is with difficulty perceived. Analogous effects arise from certain diseases: thus, in hectic subjects, as in phthisis with much emaciation, the presence of the heart seems hardly to weaken the sound at all.

3. The whole sternum yields as distinct a sound as the sides of the chest, except in the cardiac region where it is somewhat duller.

Comm. This diminution of sound in the region of the heart is very often not perceptible.

4. The same sound is perceptible over that part of the spinal column which contributes to form the chest.

Comm. The sound is here commonly less loud and duller than on the sides; especially below the fourth true rib.

SCHOLIUM. The sound is more distinct in the lean, and proportionably duller in the robust; in very fat persons it is almost lost. The most sonorous region is from the clavicle to the fourth rib anteriorly; lower down, the mammæ and pectoral muscles deaden the sound. Sometimes, owing to the presence of muscle, the sound is dull beneath the axilla. In the scapular regions on the back, owing to the obstacle afforded by the bones and thick muscles there, it is also less distinct. Sometimes, but rarely, it exists over the third false rib—owing, I conceive, to a very unwonted length of the thoracic cavity.

Comm. These remarks are very correct; but I would add, that, even in those parts of the chest whence, for the reasons stated, hardly any sound can be elicited, an experienced operator can generally judge of the state of parts within, from the peculiar and undescribable sensation conveyed by the fingers. I myself so continually experience this, that I am not often baulked by the interposition of fleshy pectoral muscles, or bulky mammæ. Cases however occur, whercin, from this cause, percussion is quite useless.

In addition to the explanation given of the cause of the sound sometimes observed as low as the third false rib, I would remark, that this anomaly arises still more

frequently perhaps, especially on the left side,—not from the *chest*, but from the subjacence in the *abdomen*, of the stomach or colon distended with air.

SECOND OBSERVATION.

Of the method of Percussion.

IV. The thorax ought to be struck, slowly and gently, with the points of the fingers, brought close together and at the same time extended.

Comm. Percussion with the flat of the open hand is also useful, especially on the lateral and posterior parts, in ascertaining the precise extent of the cause obstructing the sound. These two modes should often be conjoined in the same case. I think it unnecessary to strike *slowly*, as recommended.

SCHOL. Robust and fat subjects require a stronger percussion; such, indeed, as to elicit a degree of sound equal to that produced, by a slight percussion, in a lean subject.

Comm. The degree of percussion ought to be varied according to the subject, and the place; and it is in duly apportioning the impulse, according to the thickness and other circumstances of the parietes, integuments, &c. in each individual and situation, that the perfection of the art consists. For example, if we employ only the same force in the case of a very robust and fat subject, as in one who is lean and fleshless, we may evoke no sound whatever from the former, but a very good one from the latter: shall we then in the former case conclude that the lungs are compressed or obstructed? I cannot too much insist upon the importance of this remark.

V. During percussion the shirt is to be drawn tight over the chest, or the hand of the operator covered with a glove made of unpolished leather.

Comm. I consider this precept as entirely unnecessary. Percussion may be equally well performed, with or without the interposition of either the shirt or glove.

SCHOL. If the naked chest is struck by the naked hand, the contact of the polished surfaces produces a kind of noise which alters or obscures the natural character of the sound.

Comm. I cannot assent to the correctness of this observation.

¶ I here agree with Corvisart, both in his opinions and practice. In most cases I employ percussion on the naked chest.

TRANS.

VI. During the application of percussion, the patient is first to go on breathing in the natural manner, and then is to hold his breath after a full inspiration. The difference of sound during inspiration, expiration, and the retention of the breath, is important in fixing our diagnosis.

Comm. During inspiration and retention of the breath, the sound is every where louder: and the reverse during expiration.

N. B. The sitting posture is always understood, although not expressed by the author.

VII. While undergoing percussion on the fore parts of the chest, the patient is to hold his head erect, and the shoulders are to be thrown back; in order that the chest may protrude, and the skin and muscles be drawn tight over it: a clear sound is thus obtained.

Comm. The propriety, and indeed necessity, of these measures cannot be too much insisted on: the appreciation of all the nicer shades of sound depends on their being attended to.

VIII. While we are striking the lateral parts of the chest, the patient is to hold his arms across his head; as, thereby, the thoracic parietes are made more tense, and a clearer sound obtained.

IX. When operating on the back, you are to cause the patient to bend forwards, and draw his shoulders towards the anterior parts of the chest, so as to render the dorsal region rounded; and for the same reasons, as stated in VIII.

Comm. I would add that the arms should be crossed, or extended as much as possible. With this remark, I would say that all these precautions (VI. VII. VIII. IX.) are extremely necessary, and must be observed whenever practicable. In many cases, however, of acute and even of chronic disease, the various positions mentioned are too painful to be assumed by the patient. The same remark applies to the retention of the breath: yet, by watching favorable opportunities, and by striking gently and quickly, the necessary results may in most cases be obtained, with care and attention.

SCHOLIUM. Any healthy person may make experience of percussion in his own person or that of other sound subjects; and will thus be convinced, from the variety of the sounds obtained, that this sign is not to be despised in forming a diagnosis.

Comm. I fully agree with the author in the necessity of making frequent trials of percussion, on sound persons, but cannot admit that it can be advantageously—or, in some cases, at all,—practised on one's own chest. In order to obtain that fine and ready tact in the exercise of this method, experience alone can be our guide; and we ought, therefore, to exercise ourselves on every variety of subject, and at every convenient occasion.

THIRD OBSERVATION.

Of the preternatural or morbid sound of the Chest, and its general import.

X. And SCHOL. To be able justly to appreciate the value of the various sounds elicited from the chest in cases of disease, it is necessary to have learned by experience on many subjects, the modifications of sound, general or partial, produced by the habit of body, natural conformation as to the scapulæ, mammæ, the heart, the capacity of the thorax, the degree of fleshiness, fatness, &c. &c. ; inasmuch as these various circumstances modify the sound very considerably.*

Comm. The same remark as to the necessity of experience to procure the just tact, is applicable here. I have seen many instances of failure from a premature confidence in the operator, of having obtained the necessary tact.

XI. If, then, a distinct sound, equal on both sides, and commensurate to the degree of percussion, is not obtained from the sonorous regions above mentioned, a morbid condition of some of the parts within the chest is indicated.

Comm. It is a circumstance too obvious to be much insisted on, that the percussion must be strictly similar,

* I have purposely avoided a literal translation of the text in this place, as it is difficult to know the precise meaning attached by the author to one or two of the epithets used by him to designate the particular modifications of sound alluded to. TRANS.

and equal on both sides. The least sonorous side is certainly diseased. And even the knowledge of this fact simply, is a matter of great consequence to the practitioner. He will thereby be enabled to form a more correct estimate of the symptoms: and the phenomena which to others seem obscure, will appear to him only the necessary consequence of the organic affection the existence of which he has ascertained by percussion.

SCHOLIUM. On this truth a general rule is founded, and from this certain predictions can be deduced, as will be shown in order. For I have learned from much experience that diseases of the worst description may exist within the chest, unmarked by any symptoms, and undiscoverable by any other means than percussion alone.

A clear and equal sound elicited from both sides of the chest indicates that the air-cells of the lungs are free, and uncompressed either by a solid or liquid body. [Exceptions to this rule will be mentioned in their place.]

Comm. The Commentator confirms by his testimony founded on much experience, the various statements in the above Scholium, viz: the certainty of the indications afforded by percussion; the complete latency of many pectoral diseases; and exclusive detection of these by the method of Avenbrugger. Even in those cases where the sound is every where sufficient, the practitioner derives this great advantage from percussion,—that he can feel assured, that, however much the chest seem engaged in the disease, there is, as yet, no organic lesion of consequence there. This conviction will allow his observation to be directed, with more freedom and steadiness, to other parts of the body, and may thus enable him more readily to ascertain the real nature of the affection, some of the sympathetic effects only of which had previously engaged his attention.

XII. and XIII. If a sonorous part of the chest, struck with the same intensity, yields a sound duller than natural, disease exists in that part.*

Comm. This axiom is universally true.† By means of it I have often discovered diseases eventually fatal but of which the patients themselves were at the time ignorant. e. g. *Scirrhus Lung—Aneurism of the heart.*

XIV. If a sonorous region of the chest appears, on percussion, entirely destitute of the natural sound,—that is, if it yields only a sound like that of a fleshy limb when struck,—disease exists in that region.

* The same reason that induced me to avoid a literal translation of the Scholium of x. (p. 11.) has led me, in this place, entirely to omit the paragraph, No. XII. in the original; which, with the exception of one word (*altior*), is almost precisely the same as the following one, No. XIII. From the employment of this word, in this and several other parts of the treatise, it is somewhat difficult to consider it as admitting any other interpretation than that of “less” or “obscurer,” as applied to the sound produced by percussion. In this sense, it is synonymous with the word “obscurior” of the subsequent paragraph, and is therefore superfluous. It seems, however, quite improbable, that, in a work written in the aphoristic style of the present, such an oversight could have occurred in two adjoining sentences; and I have no doubt whatever, that the author attached a meaning to the “*sonus altior*” of No. XII. very different from that of the “*sonus obscurior*” of No. XIII. The most probable solution of the difficulty appears to me to be, to consider the terms *altior* and *profundior* as applying to varieties in the *tone* or *key* of the sound, and *clarior* and *obscurior* as relating to differences of intensity simply. But still it is not easy to assign a satisfactory meaning to all these terms, even on this principle.

The paragraph No. XII. might be retained with advantage, if it were permitted to give the gratuitous meaning of “louder” to the word “*altior*”; as it might thereby be made to apply to the disease *Pneumo-Thorax*, of which no notice is taken in this treatise, and with the nature of which the author does not appear to have been acquainted. For a full and accurate description of this affection, and of the application of Percussion in its diagnosis, see Laennec, tom. 1, p. 432.

Trans.

† With the exception in the preceding Note. *Trans.*

Comm. The same remark as on XIII.

SCHOL. The nature of the indications above pointed out, will be understood by any one who attends to the difference of sound elicited by percussion of the chest, and of the thigh, in his own person.

Comm. The difference will be more remarkable in percussion with the open hand,—a mode of operating with which the author appears to have been entirely unacquainted.

XV. The superficial extent of this unnatural sound (xiv.) in a sonorous region, is commensurate with the extent of the morbid affection.

Comm. It may be added that, in this case, the obstruction, whether solid or fluid, must be very considerable, else it would not so entirely destroy the natural resonance of the part.

XVI. If a place, naturally sonorous, and now sounding only as a piece of flesh when struck, still retains the same sound (on percussion) when the breath is held after a deep inspiration,—we are to conclude that the disease extends deep into the cavity of the chest.

XVII. If the same results (xvi.) are obtained both before and behind, on points precisely opposite, we are to conclude that the disease occupies the whole diameter of the chest.

Comm. Nothing can be clearer, more precise, or more true, than the preceding paragraphs. Under the circumstances mentioned (xvi. xvii.) we are authorized to conclude that the obstructing body either entirely pervades, or has in a great measure displaced, the lung, since the air seems to be entirely excluded from the parts in question.

SCHOL. These varying results depend on the greater or less diminution of the volume of air usually contained in the thorax [lungs]; and the cause which occasions this

diminution, whether solid or liquid, produces analogous results to those obtained by striking a cask, for example, in different degrees of emptiness or fulness: the diminution of sound being proportioned to the diminution of the volume of air contained in it.

Comm. The illustration of the author is very happy; but he affords us no criterion for discovering whether the obstructing body is solid or liquid. I obtain this important information by using percussion in different positions of the patients, e. g. in the erect and horizontal; in which case if the obstructing cause is a fluid, it will be found to vary its level (with corresponding variation of sound) according to the laws of hydrostatics; while, if it is a solid, the same results will be obtained in every position. This, however, will not hold good when the cavity of the chest is quite full of fluid.*

¶ The following remarks on the great precaution necessary to ensure correct results from percussion are by M. Laennec. In considering their import, it is, perhaps, well to remember that, although on the whole decidedly friendly to the invention of Avenbrugger, the writer is the discoverer and zealous recommender of a method (Mediate Auscultation) calculated in a great measure, to supercede the practice of Percussion.

“In the first place, percussion requires that we compare the same points precisely on both sides of the chest. For instance, if we have percussed on a rib on the one

* Neither will this rule hold good in cases of chronic pleurisy occupying only a part of the chest, in which we almost always find the fluid confined by false membranes: it is only applicable to cases of simple Hydrothorax, in which disease, in fact, the very process here recommended by the commentator, is pointed out by the author. Vide OBS. TWELFTH. XLV. SCHOL. *Trans.*

side, we must be careful not to percuss on an intercostal space on the other : we must likewise be careful that the skin and muscles are equally tense on both sides, which is often not readily effected, when the patient is lean. It is still more essential to use the same degree of force on each side, and to strike with the same degree of perpendicularity ; for even a slight degree of obliquity in the stroke will diminish the intensity of the sound one-half,—a circumstance which might lead to great mistakes.

It is also necessary to percuss the similar parts of both sides in the same manner, and over the same extent : for example, a very different result will be obtained from striking *several ribs across*, and from striking *one rib lengthwise*. The employment of different hands also, or the application of the same hand differently, will vary the results obtained. Thus I have frequently found that, when standing on the right of the patient and operating with the right hand, the left side of the chest, before and behind, seemed less sonorous than the right, while on the contrary, the *lateral* portion of the left side was more sonorous than the right ;—and that the results were exactly reversed in changing to the other side of the patient. The difference in this case depends on the difference of the angle under which the chest is struck in the different positions : and I may add that it is almost impossible to preserve the same precise degree of perpendicularity in operating on both sides of the chest.

These precautions are especially requisite when the difference of sound, as frequently happens, is not very great.” *De L'Auscult. Med. tom. 1. p. 180.*

In another place he says—“Many physicians cannot elicit a sufficient sound, but by using a degree of force that is painful to the patient. Circumstances extraneous to the patient also modify the sound obtained ; thus, a

chest which has yielded a very dull sound when percussed in a small room full of furniture, or in a bed surrounded by thick curtains, has been found, on the following day, to be much more sonorous when the patient was seated in a chair, or laid in a larger apartment." *Ib. p. 5.*

TRANS.

FOURTH OBSERVATION.

Of the diseases in general in which the morbid sound of the Chest is observed.

XVIII. The preternatural or morbid sound occurs in acute and chronic diseases; it always accompanies a copious effusion of fluid in the thoracic cavity.

SCHOL. It must be admitted that whatever diminishes the volume of air within the chest, diminishes the natural sound of that cavity; but we know from the nature, the causes, and the effects, of acute and chronic diseases of the chest, that such a result is possible in these cases; and the fact is finally demonstrated by examinations after death. The effect of effused fluids in producing the morbid sound, is at once proved by the injection of water into the thorax of a dead body; in which case it will be found that the sound elicited by percussion, will be obscure over the portion of the cavity occupied by the injected liquid.

Comm. It may be stated as a general fact that all diseases of the chest, whether acute or chronic, occasion the preternatural sound, either during their progress, or towards their termination. I do not even exclude from this remark those nervous asthmas, and violent coughs, which, in the first instance at least, appear dependent on irritation of the nerves of the part, either idiopathic or sympathetic. In almost all these cases, we find after death, in some part or other of the thorax, some induration, effusion, &c.

FIFTH OBSERVATION.

Of Acute diseases in which the chest yields the morbid sound.

Comm. Notwithstanding this title, the author does not give any account of particular diseases, but only of the period at which this sign is perceived. I will endeavour to supply this defect in some degree.

XIX. The morbid sound which is observed in acute diseases, occurs during their progress, or at their termination.

SCHOL. This consideration ought to lead all medical men to use percussion in acute diseases; as they will thereby be enabled to form a more correct judgment, which in such cases is always a matter of difficulty. It has often occurred to me to see cases of acute diseases, apparently over, and imposing on the physician under the mask of intermittent or remittent fevers, and which have eventually ended in a fatal vomica or fatal scirrhus of the lungs.

Comm. In peripneumony and pleuro-peripneumony, if the inflammation is acute, the morbid sound is perceptible on the second, third, or fourth day at farthest: the natural resonance gradually lessens, and is entirely lost by the sixth or seventh day, if the disease is to terminate fatally. On the other hand, it gradually reappears if a recovery takes place. In the more severe and simpler cases, the common symptoms are less equivocal; but in the more complicated and obscure examples of the same disease,—without percussion, how shall we ascertain the real state of the lungs, or be able to avoid committing ourselves by unwarranted opinions and false prognostics? In such cases, effusions into the pleura, or vomicae take place insensibly; and frequently under

the deceitful mask of an amendment of symptoms, or even of convalescence. The result, however, soon shows the false security of the practitioner. These grievous mistakes can only be avoided by the employment of percussion.

XX. The preternatural sound which is perceived during the course of acute diseases of the chest, occurs most frequently in inflammatory affections.

SCHOL. The reason of this observation (xx.) will be obvious to any one acquainted with the nature of inflammation. The preternatural sound may also be observed sometimes in epidemic exanthematous diseases, previously to the eruption;—as was the case in the petechial epidemic of 1757, 1758, 1759, and in the miliary epidemic of the present year (1760). In the latter instance, I observed that the preternatural sound, when once present, continued to the termination of the eruption.

Comm. In these cases, the peculiar sound is not confined to one spot, but extends over the whole chest—and is proportioned to the amount of the subsequent eruption. The remarks of Avenbrugger ought to lead physicians to attend to the state of the chest in these affections.

XXI. The morbid sound which occurs towards the termination of acute diseases, is observed, when the excretion of morbid matter is not adequate to the severity of the affection.

Comm. This observation is not always correct.

XXII. The morbid sound occurring in inflammatory diseases is commonly observable on the fourth day; it rarely precedes, but often follows this period.

Comm. I have already remarked the inaccuracy of that part of the statement that limits the occurrence of the sound to the fourth day (*Comm.* on xix).

SCHOL. This sign occurs rarely on the third, and very often on the fourth, fifth, and seventh day—but never later.* It is observed in those inflammatory affections of the pleura or lungs, or both, which are accompanied by a humid cough; but not in those attended by a dry cough,—such (e. g.) as the *drypleurisy*, and inflammation of the mediastinum, pericardium, and heart. At least in these latter affections, the sound is not observed, until such time as they verge towards a fatal termination, or have degenerated into obvious abscesses or vomicæ.

Comm. This Scholium is incorrect in many respects :

1. as to the days on which the preternatural sound makes its appearance; 2. as to the power of percussion in detecting the diseases last named in their earlier stages. In regard to this point, I would say, in opposition to Avenbrugger, that I have seldom been disappointed in detecting them by means of percussion, sooner or later according to their severity and rapidity;—but generally within a few days after their invasion.

XXIII. The morbid sound increases, from the time of its appearance, according to the nature, severity, and duration of the disease; it diminishes proportionably to the nature, duration, and copiousness of the excretions.

Comm. I have to repeat here, that the sound often diminishes (and the disease disappears) without any discoverable excretion.

SCHOL. The progressive augmentation of the preternatural sound depends on the gradual *deposition of the morbid matter*, which I have often found in such quantity as to occupy the inferior two-thirds of the affected side.

* The author explains this on the principle of critical days. I have omitted this part of the text, as purely theoretical. I doubt not, also, that his theory has, in this and some other places, biassed his judgment, and observation. *Trans.*

Comm. I do not think that the author here means an effusion of serum or pus into the cavity of the pleura; but only an *engorgement* of the lungs or pleura.

¶ On the contrary I should say, that as some degree of effusion exists in every case of pleurisy, it is to this disease especially that the observation of Avenbrugger applies; and I may add, that, by translating the old phrase “deposition of morbid matter” by the modern term “effusion,” it applies exactly. Laennec’s testimony, both as to the pathology and diagnosis, is very conclusive on this point. *Med. Aus: Tom. 1.* He says “the inflammation of the pleura is always accompanied by an exhalation from its inner surface, and this appears to commence with the very origin of the disease.” p. 331. “Percussion indicates the existence of pleurisy much more certainly [than any of the ordinary symptoms]. As soon as the effusion takes place, the natural resonance is wanting over the whole space occupied by this.” p. 346. TRANS.

XXIV. The disease in which the preternatural sound is once present, either proves fatal [on a decretory day, reckoning from its origin]; passes off with due excretion; or terminates in other affections.

Comm. The theory (false) of the two first statements has been already noticed.

XXV. The following corollaries are the result of my observation of inflammatory diseases of the chest, studied under the sign of morbid resonance:

1. The duller the sound, and the more nearly approaching that of a fleshy limb stricken, the more severe is the disease.

Comm. This is universally true, but requires some restriction in the class of exanthematous diseases (see xx.)

2. The more extensive the space over which the morbid sound is perceived, the more certain is the danger from the disease.

Comm. This is equally true, with the restriction as above.

3. The disease is more dangerous on the left than on the right side.

Comm. The difference arises, I presume, from the vicinity of the pericardium and heart in the former.

4. The existence of the morbid sound on the superior and anterior part of the chest (i. e. from the clavicle to the fourth rib) indicates less danger, than on the inferior parts of the chest.

Comm. Is this difference supposed to depend on the vicinity of the diaphragm and pericardium, in the latter case?

5. The want of the natural sound behind, indicates more danger than it does on the anterior and superior part of the chest.

Comm. This difference is sufficiently accounted for by the greater volume of the lungs behind.

6. The total destitution of sound over one whole side, is generally (*passim*) a fatal sign.

Comm. This total want of the natural sound over one whole side of the chest, may arise either from a hepatisation of the lung, or from an effusion into the cavity of the pleura : in either case, I am of opinion with *Stoll* (*Aph.* 140), that, if not always, at least in an immense majority of cases, the event is fatal.

¶. My own experience and (what is of much greater authority with me) the testimony of *Laennec*, would lead me, on the contrary, to believe that the proportion of fatal cases, under such a sign, is not so immense. In that particular termination of acute pleurisy,

so beautifully described by Laennec under the name of “contraction of the chest”—and of which instances are by no means extremely rare,—the natural sound is not only wanting over the whole affected side, but, according to the author just mentioned, never returns, even after the recovery of the patient. TRANS.

7. The absence of sound along the course of the sternum is a fatal sign.

Comm. A collection of matter in the anterior mediastinum (the only case likely to produce this sign) is generally, though not always, a fatal affection.

8. The entire absence of the natural sound over a large space in the region of the heart, is a fatal sign.

Comm. This sign indicates an inflammation, acute or chronic, of the pericardium (or perhaps the heart) with a purulent or serous effusion in this membrane.*

SCHOL. I have sometimes observed that the fatal prognostics given in the corollaries 6 and 7, were not verified when the matter made its way outwards, or abscesses formed in parts less essential to life. And this natural process has been often happily imitated by the antients, by cauterising or otherwise incising, the affected parts.

SIXTH OBSERVATION.

Of Chronic Diseases in which the preternatural sound is observed.

Comm. As in the former section, the Author in this omits noticing many of the diseases, which would seem to be included under the above title.

* See the case of Mr. N——n, in this volume. TRANS.

XXVI. The preternatural sound observed in chronic diseases is owing either to—(1.) some hidden condition of the organs, which disorders them with a slow progress and finally destroys them; or exists (2.) when certain obvious causes have induced a slow disorganization of the same.

SCHOL. These are the general sources of chronic diseases of the chest; and from whichever of the two classes of causes these arise, the morbid sound will equally and always be present.

Comm. Percussion will therefore be always proper and useful; for whether we know the precise cause or even nature of the disease, it will be at least some advantage to know that there is organic disease, and that it exists in a certain part;—a kind of knowledge that can only be gained by percussion.

XXVII. The diseases of the first class are, 1. those which depend on hereditary predisposition; 2. those which arise from affections of the mind, particularly ungratified desires, the principal of which is *Nostalgia*; 3. those which affect certain artisans, naturally possessing weak lungs.

SCHOL. 1. The influence of an hereditary taint in producing diseases we know by experience, though we cannot explain it.—See Van Swiet.

2. Mental affections, we find, produce quite opposite effects, while acting as causes of pectoral diseases. Of these affections of the mind I have observed none more powerful in rendering obscure the natural resonance of the chest, than the destruction of cherished hopes. And as among this class of diseases, *Nostalgia* (commonly called *heimwehe*—*home-ail*) occupies the first place, I shall here give a short history of it.

When young men, not yet arrived at their full growth, are forcibly impressed into the military service, and thereby

at once lose all hope of returning safe and sound to their beloved home and country, they become sad, silent, listless, solitary, musing and full of sighs and moans, and finally quite regardless of, and indifferent to, all the cares and duties of life. From this state of mental disorder nothing can rouse them,—neither argument, nor promises, nor the dread of punishment; and the body gradually pines and wastes away, under the pressure of ungratified desires, and with the preternatural sound of one side of the chest. This is the disease Nostalgia. I have examined the bodies of many youths who have fallen victims to it, and have uniformly found the lungs firmly united to the pleura, and the lobes on that side where the obscure sound had existed, callous, indurated, and more or less purulent. Some years ago, this disease was very common, but is now rarely met with, since the wise arrangement has been adopted of limiting the period of military service to a certain number of years only.

3. The various arts and occupations of life have their peculiar diseases, in like manner as the ages, temperaments, and sexes have theirs. This truth is exemplified in the case of the man of letters, the husbandman, the workers in metals, painters, &c. &c. Our particular business, however, at present, is with those arts which dispose to diseases of the chest indicated by the sound so often described. Thus I have remarked that Tailors, Millers, &c. who are forced to inhale, during their labours, a fine dust, become phthisical; while shoemakers, weavers, &c. from the forced position or application of their weak chests, during their various occupations, become asthmatical, with scirrhus lungs, &c.*

* The Author here admits that these cases are improperly placed under the head of affections produced by secret and occult causes; but excuses himself under the plea that the occurrence of such diseases and their imperceptible progress—only in some few of the numbers exposed to the noxious influences, is a proof of original debility of the affected organ, *Trans,*

I may here state a fact which I have frequently proved by dissection, but which I cannot well account for—it is this: in the abovementioned class of cases it is extremely rare to find both lungs affected at the same time; and, when this happens, one lung is always more diseased than the other.

Comm. (Note on Nostalgia.) All the greater and more profound mental affections are powerful causes in the production of corporeal disease. They principally affect the functions of the organic life: the organs concerned in circulation, respiration and digestion are especially modified; but the functions of secretion, exhalation, absorption, and nutrition, which seem at first untouched, eventually undergo no less essential changes. These organic modifications vary with the particular causes. Thus anger, by directly acting on the circulation, occasions dilatations of the heart, &c. Joy, on the other hand, merely augments the action of the same organs in a slight degree, and determines the blood towards the surface. Grief produces a directly opposite effect: it debilitates the whole vascular system, obstructs the course of blood towards the capillaries, and thus occasions that general paleness, which is most conspicuous in the face: from this result a deficiency of blood on the surface of the body, and a superabundance in the larger vessels,—occasioning the sighing, oppression, and palpitations, the passive dilatations of the heart, the engorgement of the lungs, their adhesion to the pleura, and the diminished resonance described by Avenbrugger. To these causes may be added the derangement of digestion, which is found to be an inseparable attendant of long-continued moral affections, and which inevitably induces such a state of general debility as greatly predisposes our various organs to be acted on by the morbid causes to which they are exposed.

It is to be regretted that Avenbrugger confined his anatomical examination of such cases to the lungs; as I am led to believe from the causes and symptoms of the disease, that the heart and great vessels would have been found equally affected. [The Commentator here gives some account of an analogous disorder of children, produced by moral causes and which he denominates *Infantine Jealousy*—*jalousie des enfans*.]

XXVIII. The diseases mentioned (in xxvi. 2.) arise either from (1.) a vitiated condition of the fluids, gradually produced; or (2.) from acute affections imperfectly cured.

Comm. Considering the period at which Avenbrugger wrote, and that he was the pupil of the pupil of Boerhaave, it is not to be wondered that he follows the humoral pathology.

SCHOL. 1. The vitiation of the humours arises from ingesta which cannot be assimilated, the effect of which in producing chronic diseases is well known.

2. An acute disease is said to be imperfectly cured when some morbid affection still remains after it, in some part of the body. This morbid condition will be observed either in the site of the primary disease, or, at least, in that portion of the chest which yields the morbid sound;—namely, the pleura, or lungs, or both these together, or the mediastinum or pericardium. When the primary inflammatory disease is succeeded by a collection of pus in the chest, the affection is readily recognised; but if the secondary affection is a scirrhus of the lung, how often and how grievously are medical men thereby deceived!* Often have I met with cases of fancied convalescence from acute fevers, in which

* In the above paragraph I have literally given the Author's facts, but have translated the statement of these divested of the humoral phraseology of the time.

there was hardly any cough or dyspnœa, or indeed any other sign of disease (as appeared to the attendants) but a trifling degree of irregular fever. In these cases, however, on percussion the preternatural sound was found over one whole side of the chest, and the final result was death, preceded either by dropsy or extreme emaciation; the real seat of the disease remaining, perhaps, unknown to the very last!

Comm. My practical experience entirely confirms the exactitude and precision of the foregoing observations. Under how many different forms have I seen organic lesions of this nature concealed,—simulating the most different diseases, exhibiting the most complicated and irregular course, and retaining, in certain cases, no mark whatsoever of an affection of the chest! The consequence was, that their real nature was entirely overlooked and mistaken by those practitioners who did not employ the only certain guide in such cases—percussion. These observations throw much light on the nature and proper treatment of the greater number of dropsies, which, instead of being, as commonly imagined, idiopathic affections, are, at least in a very great proportion, merely the effects of some organic lesion of a viscus.

XXIX. For the above reasons, it may be received as a general rule in chronic diseases, that when, together with the indication stated xxvi., there are emaciation and debility,—the case is desperate.

SCHOL. This result is inevitable whenever the disease does not yield to medicine. In such cases we may always conclude, that the lung of the side which yields the preternatural sound, is either compressed by some foreign body, is indurated by disease, or destroyed by some *morbid acrimony* developed within its own structure.

SEVENTH OBSERVATION.

Of the preternatural sound of the chest which results from copious extravasation of the fluids contained in the vessels of that cavity.

XXX. The fluids contained in the vessels of the chest are : 1. Chyle ; 2. Blood ; 3. Serum and Lymph.

SCHOL. I must candidly admit that I have never seen a case of extravasated chyle. I however believe the thing possible, although I am well aware that the thoracic duct runs outside the pleura : the same causes that produce erosion and perforation of the thoracic parietes, may produce this.

XXXI. The extravasation of these fluids (xxx.) may arise from the following causes : 1. rupture of the containing vessels ; 2. too great tenuity of the contained fluids ; 3. non-absorption of the same &c. &c.

SCHOL. 1. Under this head come wounds, contusions, &c.

2. Extravasations from internal causes arise from rupture of relaxed and debilitated vessels, during a state of plethora and over-activity of the circulation.

3. A third class of causes are obstructions originating in a bad habit of body.

XXXII. When from these causes the fluids mentioned are poured out in considerable quantity, the preternatural sound will exist over the space occupied by them.

SCHOL. The correctness of this statement is evinced by the experiment mentioned at the end of the scholium of xvii.

According to the plan formerly proposed (xi.) I shall now proceed to notice those affections of the chest which are not indicated by percussion.

EIGHTH OBSERVATION.

Of those affections of the chest which are not indicated by percussion.

Comm. The title of this Observation is not correct, since, by the testimony of the author himself, many of the diseases mentioned have their seat, not in the chest, but abdomen, the affection of the lungs being merely sympathetic. Nevertheless, percussion is still very useful even in these: In the first instance, it shews the integrity of the thorax, and directs the attention elsewhere; secondly, it detects the presence of organic disease in this cavity, should this arise in the course of the affection; in every period of the disease, it will assist the physician in his diagnosis, prognosis, and treatment.

XXXIII. Certain diseases attended by a violent cough, and thereby creating a suspicion that the lungs are certainly implicated, are nevertheless truly diseases of the abdomen, and affect the pulmonary organs merely sympathetically.

SCHOL. Under this head are ranged the gastric and convulsive coughs of infants, pregnant women, and such other persons as have their abdominal viscera oppressed by the *lentor* of autumnal agues, or a *superfluity of phlegm*.

XXXIV. Violent coughs, dyspnœas, asthmas and consumptions, are also occasionally observed, which originate in some incomprehensible irritability of the nerves of the chest.

Affections of this sort rarely give rise to the preternatural sound: from the absence of this, however, and the presence of a copious watery urine, their existence may be pretty confidently presumed.

Comm. Most of the affections mentioned in the preceding paragraph, I consider as purely sympathetic, and as depending, in general, on disorder of the digestive

organs. I agree with the author that such affections are, in their earlier stage, not discoverable by means of percussion; but as nothing is more common than the conversion of those disorders which are called nervous, into affections truly organic of the heart or lungs, there is no doubt that eventually they become discoverable by this means. The origin of pulmonary disorders, in nervous affections attended by a cough is easily explained. Besides, who has not observed that a great proportion of nervous women die phthisical? It is also true that disorders of the stomach induce pulmonary phthisis. In long continued derangements of the digestive organs, congestions will almost certainly ensue in some of the abdominal viscera, which while they impede the function of respiration (mechanically or by sympathy), will necessarily in the end affect the lungs themselves. The continued irritation will produce an indolent state of phlogosis, which may be considered as the first stage of those structural lesions which constitute phthisis; and which will be followed by tubercles, &c. I may add, that those secondary consumptions, whether the consequence of nervous affections or gastric disorder, would be of extremely difficult recognition, but for the aid afforded by percussion,—inasmuch as it is their peculiar character, that the symptoms of the primary disease still continue, for some time, the more conspicuous of the two.*

SCHOL. Under this head are ranged the coughs, dyspnæas, and asthmas so common in hysterical and hypochondriacal affections; the nervous consumption and asthma of old persons; and, perhaps we may add, the polypous concretions found near the heart in young subjects.

* I need hardly point out to the English reader the exact coincidence of the opinions and experience of Corvisart with those of Dr. Philip. See his papers on *Dyspeptic Phthisis*. Trans.

XXXV. A slight engorgement of the lung, a scirrhus of small extent, a small vomica, and a trifling extravasation, are not detected by percussion,—unless, sometimes, by the decreased resonance of the affected part.

Comm. With the view of restricting, in some degree, the meaning of the above paragraph, I would observe, that, in detecting slight lesions, much will depend on the particular situation of the disease, on the habit of percussion, &c. For example, I think that a scirrhus or vomica of the size of a common walnut, situated on the surface of the lungs or immediately beneath the pleura, may be recognised, or at least suspected; while if placed more centrally, the chance of discovering it would be much less. In like manner, I would say, that three or four ounces of extravasated fluid might be discovered by care, if existing in one side of the chest, or, more particularly, in the substance of the lungs;—while the same quantity, if distributed between both cavities, would not admit of detection by the most careful percussion.

SCHOL. These affections are not dangerous until they reach a size when they become more readily discoverable by means of percussion.

XXXVI. There is another class of diseases of the lungs [undiscoverable by percussion] in which the distinguishing symptoms are a very severe cough, with expectoration of fatty, chalky, gypseous and stony matters.

SCHOL. These cases are known by the nature of the expectoration. I have frequently observed a cough of this kind (but without the peculiar expectoration) succeeding miliary fevers improperly treated.

NINTH OBSERVATION.

Of the appearances on dissection, in cases where the preternatural sound of the chest had been observed.

XXXVII. These are the following :

1. Scirrhus of the lungs ;
2. The conversion of this into an ichorous vomica ;
3. A purulent vomica (simple or ruptured), in the pleura, lungs, mediastinum or pericardium ;
4. Empyema ;
5. Dropsy of the chest, in one or both cavities ;
6. Dropsy of the pericardium ;
7. Extensive extravasation of blood in the cavity of the pleura or pericardium ;
8. Aneurism of the heart.

Comm. Of how many errors, prejudices, and false explanations, have these unknown or misunderstood lesions of the thoracic viscera, been the source and subject ! Owing to ignorance respecting their real nature, resulting in the first instance from the neglect of morbid anatomy, the attention of physicians has been arrested by the obvious, but uncertain and illusory symptoms of the secondary affections produced by these. The secondary affections have been raised to the rank of idiopathic, their history and treatment have been formally described by the gravest authorities, and the truth thereby concealed, and falsehood propagated, to the great detriment of the healing art. The case, however, is now different ; and I take some credit to myself for having directed the attention of my brethren to the frequency and multiplicity of organic diseases. Of the surpassing importance of a knowledge of these no one can doubt ; and when it is considered that percussion—and percussion alone—

can make us acquainted with them, we cannot sufficiently applaud those men who have enriched this, the most difficult department of medicine, with a kind of knowledge at once so scientific and satisfactory.

SCHOL. I will now proceed to notice these diseases in order, premising, occasionally, some account of the general symptoms.

TENTH OBSERVATION.

Of scirrhus of the lungs, and its symptoms.

XXXVIII. By scirrhus of the lungs I mean the degeneration of the natural spongy substance of the organ into an indolent fleshy mass.

Comm. Although we may offer objections to the name used by our author, we must admit the existence of the disease thereby designated. I am ignorant of the precise nature of this affection. I think it is generally formed slowly and insensibly, as in the case of artisans exposed to a dusty atmosphere, or as a sequel of acute disease. Perhaps, also, it may originate spontaneously, and be the result of a very slow latent peripneumony, &c. The term *carnification*, lately applied to this affection, is inexact, inasmuch as the character of the lung is not at all like muscular *flesh*, but like *liver*: on this last account the term *hepatization* is much more correct and appropriate.—In this variety of morbid structure, what becomes of the blood vessels, bronchia, vesicles, glands, and nerves of the pulmonary organ?

SCHOL. A portion of sound lung swims in water, but this carniform degeneration sinks. There is often observed a vast difference in the character of these scirrhi, in respect of hardness, colour, and component parts. Thus, in inflammatory diseases of the chest proving fatal on the fifth, seventh,

or ninth day, the lung is very often found so completely gorged with blood, as to resemble *liver* in every respect, both as to colour and consistence. One appearance deserves to be noticed : the lung is frequently invested with a purulent adventitious membrane, in those instances wherein the fatal peripneumony has succeeded an acute pleurisy. In chronic diseases of the lungs the appearances are extremely various. Frequently they are interspersed and as it were marbled with a fatty kind of matter; frequently along with the fleshy appearance, they have the consistence of cartilage; and very often they are found indurated by means of a thickened and black blood. These varieties, doubtless, depend on varieties of the *morbific matter*.

Comm. In the above Scholium, the author has confounded under one name different diseases. The sudden effusion of blood which takes place in very intense inflammations of the lungs (and which is so well described by Avenbrugger) is different from the slow formed scirrhus properly so called. The term *purulent* applied to the false membrane of pleurisy, is the phraseology of the author's day.

¶ There is little doubt that Avenbrugger, in the above Scholium, has confounded, under the term scirrhus, different pathological states of the lungs—viz. peripneumony, tubercular degeneration, melanosis, &c. In one respect, however, he is probably more correct than his commentator, to wit, in classing together the chronic induration, and the acute hepatization, of the lungs; since it would appear, from the investigations of Laennec, that these two are only varieties of one and the same process—inflammation. For the only complete and satisfactory exposition of these and other morbid states of the lungs, see the invaluable treatise of Laennec.

TRANS.

XXXIX. The presence of scirrhus of the lungs, in its primary unsoftened condition, may be suspected from the following signs :

Together with the diminution or entire loss of the natural sound over the affected part, there is an infrequent cough without any expectoration, or with only a scanty excretion of viscid and crude sputa. During a state of quiescence there is nothing to be observed much amiss, either in the condition of the pulse or respiration ; but upon any considerable bodily motion, or after speaking for some time, these persons become speedily exhausted, anxious, and breathless, and complain of a sense of dryness and roughness in the throat. At the same time the pulse, which had previously been of moderate frequency, becomes quick and unequal ; the respiration and speech are broken and interrupted by sighs ; the temporal, sublingual, and jugular veins of the affected side, are more than usually distended ; while it will be observed that this side of the chest is less moveable than the other, during inspiration. Meanwhile the natural and animal functions continue to be well performed ; and the patient can lie on either side indifferently.

All the above symptoms are more severe in proportion as the scirrhus is more extensive.

Comm. The above description of the symptoms of this affection is most just and admirable, and sufficiently proves the spirit of observation of the author, and the great pains he must have taken in studying diseases. Instead of being enabled merely to *suspect* the existence of the disease (as he modestly expresses himself), he might have said with truth, that we can *recognise* it by the signs pointed out by him. There is a necessity for other signs beside Percussion in this case, as, though this will certainly make us acquainted with the *exis-*

tence of an *obstruction* in the chest, it will not inform us of its precise *nature*. To the foregoing signs of scirrhus I would add the following as invariably present:

1. progressive emaciation, although sufficient nutriment be taken;—2. a low febrile diathesis;—3. a feeling of oppression and weight, but without pain, in the affected side. From the manner in which the author terminates his description of this disease, one might be led to imagine that it might remain stationary without necessarily abridging life. The truth however is, that it proves fatal more frequently in its indurated than in its suppurated state. When it has reached the height indicated by the signs above detailed, it increases rapidly, and its fatal termination is precipitated by additional symptoms. The appetite gradually decreases; the sleep is lost; great anxiety prevails; and the character and temper are entirely changed, the patient (although naturally placid) often becoming harsh, violent and irritable, and extremely desponding. There are partial sweats on the breast and neck sometimes warm, more frequently cold, and followed by fainting. There ensue frequent paroxysms of extreme breathlessness. The patients are now confined to bed in a state of complete marasmus. Some can lie on the back; others can bear only a sitting posture; in the last days of life none can lie down except on the affected side. Sometimes there is slight delirium, sometimes not; sometimes there is œdema of the limbs of the affected side, but more commonly there is none. Before death the pulse becomes small, unequal and intermittent.

ELEVENTH OBSERVATION.

Of Vomicae in general.

XL. When an humour, sound or morbid, is deposited from the circulating mass in a solid form, and (together with the extreme vessels) is afterwards, by means of the vital powers softened and converted into matter, and contained in a sort of capsule, I term this collection of matter a *Vomica*.

SCHOL. This notion applies to every vomica, whether produced by a vice of the solids or fluids, as is clear from the history of *obstruction* and *inflammation*.

Comm. The author extends the meaning of the term vomica, beyond its ordinary application, to a collection of matter in the lungs. It will be recollected that he was the pupil of Van Swieten.

XLI. I have observed two kinds of Vomica—the *Ichorous* and *Purulent*. The former occupies the lungs only; the latter, both the lungs and other thoracic viscera. They are both either close, or communicating with the Trachæa.

SCHOL. By the term *Ichorous Vomica*, I mean a sac containing a thin fluid frequently of a reddish yellow colour, frequently of a reddish brown, often of a colour between these, different from pus, and arising from the destruction of a scirrhus lung. By *Purulent Vomica*, I understand an encysted abscess of the chest, resulting from the conversion of an inflamed spot into a white, thick, glutinous, fatty matter. When these communicate with the Bronchia and discharge any of their contents by expectoration, they are called *open*; otherwise, *close* or *shut*.

Comm. The conversion of scirrhus [hepatized] lung into ichorous or serous matter is correctly stated. It takes place insensibly, and commonly without pain, being the result of a species of decomposition, and not of true inflammation. By “*chest*” in the above scholium, I think the author means simply the “*lungs*.”

XLII. 1. *Ichorous Vomica*. If a scirrhus of the lung, recognised by its proper signs (xxxix.) is converted into matter, it presents the following symptoms: The patient begins to languish and waste away insensibly (although the usual quantity of food is taken), with a quick, contracted, and unequal pulse. The respiration, even during a state of quietude, is unnaturally anxious and frequent; and is remarkably interrupted by sighing. The forehead, during the more severe attacks, is sometimes covered with a cold sweat. The eyes are dim; the veins of the cheeks and lips are livid, and the tongue, especially on the affected side, is of a leaden hue. At the same time there is neither pain nor thirst. The diseased side, however, is observed to be less mobile than natural, and the degree of immobility is proportioned to the bulk of the vomica into which the scirrhus has been resolved. The cough is infrequent, interrupted, and dry; or the expectoration, if any, is dirty or blackish (*cænosum aut fuscum*).

When things have got to this height, the appetite begins to fail, and at length is entirely lost; and whatever is eaten only produces an increase of anxiety during the process of digestion: this process, however, takes place without any hectic flushing, which always accompanies the purulent vomica.

In some cases, when there is a dissolution of the central parts of the scirrhus, the abdomen and hypochondres sink in; in a very few instances, the same parts are slightly swollen, and with an indistinct feeling of fluctuation. The

urine rarely presents any deviation from the natural state ; sometimes, however, it is red, and with a sediment (if any exists) of a cinnabar colour. The stools are of natural character, except under the influence of medicine. The extremities, even when of a livid colour, are never hotter than natural, until a few days before death ; the affected side is, moreover, observed to swell, and the hand and foot in the first place. The patient now suffers from frequent sinkings and faintings ; and from having hitherto been able to lie easily on either side, he is able to remain on the affected side only.

Comm. I have never observed the morbid appearance of the tongue more on the affected side than the other. The anxiety experienced after eating, exclusively of the debility of the stomach, is accounted for by the encroachment of the distended viscus on the cavity of the chest, by compressing the diaphragm &c. &c. &c.

2. *Close Purulent Vomica.* The following are the symptoms of this affection : While the abdominal organs still continue to perform their functions well, there is often present a very troublesome, frequent, dry cough, so severe as to irritate the fauces, to render the voice hoarse, and often to excite vomiting. At this time are observed frequent irregular chills, followed by heat, and strong flushing of the cheeks and lips, particularly of the affected side. A degree of lassitude is experienced, more remarkable after a full meal ; and at the same time, there is perceived a degree of quickness and straitness of the respiration, sufficient to excite suspicion of some morbid affection of the chest. The pulse is also found to be contracted, frequent, somewhat hard and unequal during the period of digestion ; and even at other times it is never in a perfectly natural state,—more especially, under the influence of bodily motion, laughing, or speaking.

If at this time the Vomica has reached a size to be detected by percussion, the following additional signs exist: The patient is not nourished by the food taken, partly because it is, in a greater or less degree, rejected by vomiting, and partly on account of the imperfect assimilation of what is retained. As the disease increases, the whole process of respiration is at length carried on by one lung; an incessant state of anxiety prevails, and the patient remains fixed on the diseased side, through dread of impending suffocation if he turn on the other. The face, hands, feet, and the affected side are œdematous; while the opposite part of the body, from deficient assimilation, hectic heat, and nocturnal perspirations, is extenuated. The urine now becomes scanty, red, turbid, with a copious branny sediment, and soon putrefies; and the scene is finally closed, with short and asthmatic breathlessness, lividity of the cheeks, lips, and nails, &c.

Comm. The remark respecting lying on the affected side is not always correct. To the above, I would add one invariable symptom, viz. an incessant thirst. Towards the close of the disease there is likewise commonly a colliquative diarrhœa, alternating with the night sweats; but this is not constant.

3. *Purulent Vomica communicating with the Trachea.* When a Vomica of considerable size, discoverable by percussion, bursts into the Trachea, or rather Bronchia, by a large opening, it produces instant suffocation; if, by a small aperture, it is recognised by the following marks: By means of a violent cough, pus is expectorated, which is, in different cases, white, yellow, saffron, green, brown, bloody; which sinks in water, and, when thrown on hot coals, emits a stinking nidorous smell. If at this time, while the patient is coughing and spitting, the palm of the hand be placed over the site of the vomica, i. e. over the place where its ex-

istence had been detected by percussion,—the noise of fluid within the chest will be sufficiently manifest. This kind of expectoration will cease for some days, with relief to the patient; but it speedily returns, and is always preceded, for four and twenty hours, by an increase of the febrile state. During this state of things, and before the return of the expectoration, if percussion is applied over the site of the vomica a sound exactly like that from a fleshy limb is obtained; but if this is delayed until the evacuation of the accumulated pus, then there is perceived a distinct, though obtuse sound. The slow fever which invariably accompanies this condition, is encreased after eating, and is still higher during the night; and at these times, the forehead, neck, and chest, are covered with perspiration. With the increase of these symptoms, and the continuation of the purulent expectoration, the breath becomes tainted, insomuch as to be extremely disagreeable both to the patient and the attendants. The thirst continues great, but the appetite is lost, even for the greatest delicacies, which, however sparingly taken, produce, in place of refreshment, langour and anxiety. [The case is very different with them whose sputa are inodorous, the appetite in many being even great]. The urine is uniformly frothy, grows speedily putrid, and deposits a viscid, tenacious, white sediment. The patient now daily grows more emaciated: the bones almost pierce the skin,—the hair falls off,—the nails become curved,—the legs swell; at length a colliquative diarrhæa supervening first lessens, and then suppresses the expectoration, and the sufferer finally dies suddenly, on the third day after that on which he began to remain obstinately fixed on his back, with his legs drawn under him.

Comm. On inspecting the chest after death, in these cases, we find the vomica contained within the substance of the lung, and this more or less compressed &c. accord-

ing as the vomica has been of greater or less extent. It frequently happens, however, that there is no alteration in the remaining portion of the lung; and in all cases it is to be observed, that the vomica, properly so called, occasions much less disorganisation of the viscus, than an abscess which is not confined by a cyst. In this latter case, we find the pulmonary substance softened and destroyed, irregularly excavated, with the vessels laid bare, and the whole more or less dissolved into a filthy-looking fetid mass.

In comparing the various kinds of the *purulent vomica*, with the solid scirrhus of the lungs, or the *ichorous vomica*, we find a vast difference as well in the symptoms and nature of each, as in the constitution of the subjects in which they are found. In fact, the purulent vomica is always the result of an inflammation, more or less acute, of the lung; and hence we have reason to expect in it a train of symptoms very opposite to those that occur in the ichorous Vomica: for example, in the former we have marked fever, with great internal heat, thirst, flushing of the face, constant anxiety, contracted, hard and frequent pulse, great emaciation, and a rapid progress to a fatal termination. The victims of this affection, accordingly, are persons in youth or adult age, of a strong and sanguine temperament, leading an active life, and exposed to the ordinary causes of inflammation.

XLIII. *Empyema*. When a vomica (xxxvii.), ascertained by percussion, discharges its contents into the cavity of the pleura, and upon the diaphragm, *Empyema* is produced.

SCHOL. I premise this definition to prevent the affection now in question from being confounded with a vomica that has discharged its contents into the trachæa.

XLIV. If a large vomica, whose superficial and central extent is supposed to have been recognized by the marks pointed out (OBS. THIRD. XV. XVI. XVII.), shall have burst as above mentioned (XLIII.), it may be recognised by the following signs:—

The patient who had usually lain on the affected side, starts up with a sudden pain (as if nearly suffocated), and begs to be held in the erect posture.

If percussion is now applied, it will be found that the natural sound, which had been nearly lost in the site of the vomica, has in some degree been restored in that place; while it is more or less destroyed (according to the quantity of pus effused) over the posterior and inferior parts of the chest.

There is now a very frequent cough, which is either dry, or with a scanty, frothy and noisy expectoration. The respiration becomes very laborious, with frequent faintings, and a cold sweat bedews the forehead and throat; the cheeks and lips are of an ominous red, while the nails grow livid, the pupils dilate, and death (which follows in a few hours the rupture of a large vomica) is finally preceded by dimness of sight, &c.

A small vomica, ruptured in the same manner, produces the same symptoms, and is equally fatal. This issue, however, is of later occurrence, and is preceded by the marks of pleuro-peripneumony.

Comm. On inspecting the chest after death in these cases, if the Empyema is only of recent formation, very little morbid change is observed on the pleura. On the contrary, if a considerable period has elapsed since the rupture of the vomica, the natural character of the membrane is much altered, and in a degree proportioned to the duration of the disease. Sometimes the membrane is thickened, indurated, of a white colour, and some-

times even cartilaginous ; at other times it is softened, corroded, and foliated.

Most commonly the morbid alteration of the membrane is confined to the place of the effusion ; sometimes however, it involves the whole pleura. Very often there are adhesions between the pleura of the lungs and ribs or diaphragm, of old date, or resulting from the inflammation excited by the empyema. Frequently these adhesions form pouches or sacs, in which the effused pus is lodged, in whole or in part. In these cases it occasionally happens that the contents of the ruptured vomica do not reach the diaphragm, which consequently remains sound. In this case, the affection is not an *Empyema* strictly so called.

TWELFTH OBSERVATION.

Of Dropsy of the Chest.

Comm. Great mistakes have been made respecting the diagnosis of this disease, partly from the real difficulty of recognising its presence in certain cases, but much more from assigning to it as pathognomonic symptoms, signs which in fact belong to other affections, of which this is merely the consequence. I should have thought that our author would have avoided this almost general error, from his experience in pectoral diseases, his superior diagnosis of them (by means of percussion) in the living subject, and his opportunities of distinguishing the secondary from the primary affections, by examinations after death. It cannot be doubted, however, that he has fallen into the prevailing error, and has comprised in his description of hydrothorax as an idiopathic and primary affection, a great many symptoms which are very foreign to it, and belong clearly to

organic lesions of the heart and large vessels. In my commentaries on the respective signs detailed by him, I shall point out these mistakes.

XLV. When water is collected in the cavity of the chest, between the pleura [costalis] and the lungs, the disease is called dropsy of the chest ; and this is said to be of two kinds, namely, according as the fluid occupies one, or both sides.

SCHOL. This is ascertained by percussion in the living subject ; and is demonstrated by anatomical examination after death. The general symptoms of this disease are chiefly the following :

1. Difficult and laborious respiration ;
2. A cough at intervals, which is dry, or only attended by sputa of a thin watery nature, or occasionally somewhat viscid ;
3. A pulse contracted, somewhat hard, frequent, unequal, and often intermitting ;
4. A sense of breathlessness and suffocation on the slightest motion ;
5. An incipient dislike of warm food ;
6. Perpetual anxiety about the scrobiculus cordis ;
7. Great pressure on the chest, and distension of the stomach during the period of digestion ;
8. A murmuring noise about the hypochondres, and frequent eructation of flatus, with momentary relief ;
9. Scarcely any thirst ;
10. Urine very scanty, and rarely made, red, with a lateritious sediment ;
11. Swelling of the abdomen, more especially in the Epigastrium, and particularly in that point on which the incumbent water gravitates ;
12. A sub-livid swelling of the extremities, especially of the feet, which are moreover cold to the touch ;

13. Œdematous tumescence of the inferior palpebræ ;

14. A pallid, or, according to the nature of the affection, a sublivid discoloration of the cheeks, lips, and tongue ;

15. Inability to lie down ; anxious distressing nights, with heaviness, yet frequently sleepless.

All these symptoms vary in a wonderful manner according to the disease.

FIRST KIND.—*Dropsy of one side of the Chest.* Beside the general signs of this disease above enumerated, the affected side, if completely filled with water, is enfeebled (*effæminatum*), and appears less moveable during inspiration. In this case, also, the affected side yields no where the natural sound on percussion. If the chest is only half-filled, a louder sound will be obtained over the parts to which the fluid does not extend ; and, in this case, the resonance will be found to vary according to the position of the patient, and the consequent level which the liquid attains. The Hypochondre of the affected side is also unusually tumid, and more resisting to pressure than the rest of the abdomen. The palpebra, hand, and foot of the affected side are slightly œdematous. It is a remarkable fact, that the reclining posture [*decubitus declivis*] is easily borne when the chest is entirely full ; while the contrary is the case, when there remains space for the fluctuation of the water.

SECOND KIND.—*Dropsy of both sides of the Chest.* If fluid is contained in both sides of the chest, the following specific signs, in addition to the general symptoms, exist : The natural sound is destroyed over the space occupied by the water in either side. The patients uniformly become asthmatic ; and resemble, in many respects, those labouring under Ascites, only that the former have their inferior palpebræ and hands swollen. They cannot lie in an horizontal posture, and are equally threatened with suffocation on

whichever side they turn ; on which account, they are forced to remain sitting, day and night, to prevent the pressure of the fluid from being felt on the upper parts of the chest (which would be the case on lying down), in the same degree on which it now gravitates on the abdomen. The effect of this state of things might lead to the suspicion of Ascites, only that we find, on examining the patient in the erect position, that the hypochondriac regions are more swollen than the inferior parts, which is not the case in Ascites.

All these subjects die as if from peripneumony, that is to say,—the pulse fails, the whole body, except the chest and head, grows cold, the cheeks and extremities become livid, the respiration is at first laborious, then interrupted, and finally ceases altogether.

Comm. The author's distinction of hydrothorax according as one or both sides are affected, although useful and proper, and easily known by means of percussion, is merely a difference of *quantity*, and would, I think, be better expressed by the terms *partial* and *complete*. But the essential grounds for different species of dropsy is a difference in their nature and causes ; and hence the grand natural division of these must be into *Primary* and *Symptomatic*. Without this distinction there will always be the greatest confusion in characterising them by any signs or symptoms.

[I shall now remark, in order, on the various symptoms enumerated by the author, and shall repeat the notation and titles employed in the text, for the sake of easy reference.]

1. *Difficult respiration.* The respiration, strictly speaking, is not difficult or laborious except on exertion ; it is short and confined, yet performed with sufficient calmness. The cause of the short breathing is ob-

vious.—But even if the respiration were laborious, this would still be but a very equivocal symptom, as it exists in many other affections, e. g. in all the diseases of the heart, large vessels, or lungs; in true asthma; &c.

2. *Cough &c.* The intervals between the fits of coughing are long, and the cough itself is generally inconsiderable and without any violent paroxysms.

3. *The pulse.* The characters of the pulse in the idiopathic hydrothorax, are absolutely the reverse of those given by our author,—it being, most commonly, *full, somewhat soft, slow, quiet, regular*,—feebler and more frequent according as the complaint increases, but always remarkable for regularity. These, at least, are the qualities of pulse which I have observed in similar cases, and I have had occasion to witness a great many, considering the infrequency of this disease in its state of simplicity.

In organic diseases of the heart and great vessels, however, one of the principal symptoms is the deranged condition of the circulation,—the pulse being, at different times, *hard, full, vibrating, frequent, irregular, greatly intermitting, undulating*, in short, varying extremely. It would appear, then, from this statement, that in the cases of hydrothorax, wherein Avenbrugger had observed the kind of pulse mentioned by him,—there existed some primary organic lesion of the heart or large vessels, of which the hydrothorax was merely a consequence;—as it is known to be one of the most common.

4. *Breathlessness on motion.* This symptom is always present, and is easily explained on mechanical principles. It is, however, a very equivocal sign of hydrothorax, since it is found in all other diseases which produce a proportionate impediment to the introduction of

the necessary quantity of air into the lungs,—such, for instance, as a scirrhus or vomica of the lungs, empyema, aneurism, &c.

5. *Nausea &c.* I consider this sign as insignificant.

6. *Præcordial anxiety.* This symptom is not usually present in idiopathic hydrothorax, but commonly attends the cases resulting from disease of the heart. It is, therefore, an equivocal mark of simple hydrothorax.

7. *Oppression of the chest after eating.* This is readily explained by the pressure of the enlarged stomach on the diaphragm.

¶ I wonder that the commentator does not remark the equivocal character of this symptom also, since it exists in almost all diseases of the heart and pericardium.

TRANS.

8. *Flatulence.* The discharge of this gives momentary relief in hydrothorax, on the same principle that the retention of it occasions uneasiness: it cannot, however, be properly reckoned as a symptom of this disease in particular.

9. *Thirst.* I consider (with the author) this to be very rare in the idiopathic affection, but not so in the symptomatic.

10. *The Urine.* The state of this excretion described by the author is common to every species of dropsy.

11. *Epigastric tumour.* Explained on mechanical principles.

12. *Livid œdema of the extremities.* This symptom rarely exists in primary hydrothorax, and is rather to be considered as a sign of organic disease of the heart.

13. *Œdema of the eyelids.* This symptom is certainly common in primary hydrothorax, but exists also in many other affections.

14. *Paleness or Lividity of Countenance.* In hy-

drothorax the face is generally pale, wasted, anxious, and not swollen; the lips pale and thin; the tongue neither pale nor livid. All the symptoms of lividity depend on an affection of the heart or great vessels.

15. *Anxiety, inability to lie down, &c.* I would say that none of the symptoms here enumerated belong to simple hydrothorax, which is a disease of comparative tranquillity and sameness. In the same affection, however, resulting from diseased heart, all the symptoms enumerated exist in a high degree.

DROPSY OF ONE SIDE. In such cases, as one side of the chest is only partly filled, the effect of the water in producing tumour of the hypochondrium is at once illustrated and detected by causing the patient to assume the horizontal posture, when the tumefaction in a great measure disappears.

DROPSY OF BOTH SIDES. The observation respecting the total inability to lie down, is often not true in the simple hydrothorax; but is invariably so in that depending on diseased heart. *The death of Pneumonics* is, doubtless, that of subjects whose disease is symptomatic of organic lesion of the heart or lungs, but not of those whose disease is a simple primary dropsy.

After these special remarks on the various symptoms mentioned by our author, I shall sum up this commentary by a brief description of the disease, such as it has presented itself to me when unaccompanied by organic lesion, as was ascertained on dissection. In this state of simplicity it is however extremely rare.

In recognising this affection, it is important to study its causes and the previous history of the individual. When idiopathic, its attack is generally sudden, and succeeds to cold drinks—the suppression of accustomed evacuations,—the measles, &c. &c. When any of these

causes has preceded the disease, and none of the symptoms peculiar to organic lesions of the lungs, heart, or great vessels have done so,—there exists already much probability of the uncomplicated nature of the dropsy.

The patient at first complains of a sense of weight, uneasiness and weakness, of anxiety and pressure at the præcordia, and a difficulty of breathing, at first perceived only in the act of ascending, or on using considerable exercise. The appetite decreases, the thirst augments, the urine is somewhat more scanty, commonly natural in colour, sometimes red, and when depositing a sediment (which is rare) this is commonly lateritious. There is an occasional cough, usually dry, or with slight mucous expectoration. In the progress of the disease, the countenance gets daily more pale, withered and anxious, but without œdema; the eyes are dull and heavy, and gradually lose their natural expression; and the lips pallid and thin. If the effusion is confined to one side, this is observed to become more rounded, and the intercostal spaces larger, as the water accumulates: This is followed by œdema of the same side of the chest, and sometimes of the arm of the same side,—a local affection unconnected with the œdema of the lower extremities, which afterwards comes on. At this period, percussion gives certain indications of the quantity of the fluid. During almost the whole course of this disease the patient can lie horizontally, on either side, or on the back; in the very last stage of it, he frequently lies obstinately on the affected side, if the effusion is partial, or keeps the sitting posture if both cavities are full. There is never any palpitation of the heart, its action being observed to be feeble, tranquil, and regular. In accordance with this state of the heart, the pulse is often full, soft, slow and regular: as the disease ap-

proaches towards its final close, it becomes more feeble and frequent, but still remains regular. At this time the urine becomes scanty and thick. The disease retains a sameness of course, and the termination has nothing remarkable, being generally without much suffering, and with the senses and mental faculties still preserved.

After this *exact description** of primary simple hydrothorax, it is easy to convince ourselves how illusory and false are all those histories of this disease given by almost every author, in which we find recorded as decisive indications of the affection—*starting from sleep,—palpitation—præcordial distress—inability to lie down—unequal, irregular, intermitting pulse, &c. &c.*—symptoms which clearly belong to an anterior organic disease of the heart or great vessels,—as is, indeed, demonstrated, in such cases, by examination after death. On inspecting the chest after death in the idiopathic disease, if it has arisen slowly and without inflammation we find the pleura almost in a natural state, or only, at most, a little thicker, denser and whiter than usual. If the effusion has existed on one side only, and in great quantity, the pleura is evidently thickened, and the lung wasted and pressed against the mediastinum. The heart is rather diminished than increased in size, pale, empty, and unchanged in structure.

¶ For a further account of the symptoms of the idiopathic Hydrothorax, and an admirable contrast of these, *seriatim*, with those indicative of organic affection of the heart, see the Commentator's Treatise on diseases of the heart. p. 446. 3d. edit. See also Laennec, tom. 1. p. 409, who considers death from the idiopathic disease

* So termed by the Commentator. *Trans,*

of as rare occurrence as one in two thousand. The two varieties of this disease are very generally confounded by English writers in their descriptions. See Dr. Maclean's Treatise on Hydrothorax, Dr. Blackall on Dropsy, &c.

TRANS.

XLVI. *Dropsy of the Pericardium.* When the liquor pericardii is morbidly encreased, so as to be capable of disturbing the natural action of the heart, the disease is called Dropsy of the Pericardium: of this there are two species, as the fluid is purulent or serous.

Comm. The author here comprehends, under the same name, two different affections, viz. a collection of turbid, milky, sero-purulent fluid, the consequence of inflammation of the pericardium; and the morbid accumulation of the natural fluid. It is only to the latter species, that I consider the name of dropsy as at all applicable.

Schol. The fluid naturally present in the pericardium accumulates in still greater quantity in those who suffer a long protracted mortal agony, as we find on examination after their death. But it is not to this accumulation, originating in the relaxation of death, but to that produced by *obstruction* during life, that I apply the term dropsy. I have ventured to divide the affection into two species, because I have often witnessed both of them. In the first variety, the heart is rough, and as it were shagged, with a coating of the purulent matter; while in the latter, the organ is only of a paler colour than natural. Many may be of opinion that the purulent dropsy would be better classed under the head of Empyema; but I shall never quarrel about words, when there are appearances to instruct us.

Comm. The author does well to distinguish the accumulation that takes place in the last moments of life,—and which may take place in any disease,—from the

true dropsy occurring, from morbid causes, during life. By *obstruction* he means any causes which impede the due absorption of the fluid that exists naturally in all serous cavities. The principal causes of this *obstruction* in the present case are—disease of the heart; inflammation of the mediastinum, lungs or pleura; also other effusions, such as hydrothorax and anasarca: it very rarely happens that a local morbid affection of the pericardium itself is the sole and immediate cause of this effusion. From the nature of the causes just stated, it will be perceived that dropsy of the pericardium must be very rarely idiopathic: in fact, there are very few well authenticated instances of it in a state of simplicity, without some concomitant morbid condition of one or other of the thoracic viscera. Although it be very true, as Avenbrugger says, that it is foolish to quarrel about words, when we have facts before us, still when it is proposed, as in the present case, to comprehend two very different diseases under one name, it becomes of consequence to point out the impropriety of the designation. Under the title of the *Purulent Dropsy* of the pericardium, the author describes well the morbid appearances of both the acute and chronic pericarditis,—diseases entirely dissimilar to *Hydropericardium*, in their origin, symptoms, progress, and termination. For a full account of pericarditis, acute and chronic, see my *Treatise on the Heart*.

Signs of Hydropericardium. Almost all the symptoms which have already been enumerated as accompanying dropsy of the chest generally, accompany this species also: in addition to these, however, I have observed the following specific signs of the dropsy of the pericardium:—

The sound in the cardiac region, which I have already stated (III. 2. 3.) to be naturally more obscure than

in the other parts of the chest, is now as completely deadened as if the percussion were applied to a fleshy limb. A swelling is perceived in the præcordia, which can readily be distinguished, by its superior resistance, from the stomach distended by flatus.

The patients fall asleep, while sitting, the body being inclined forwards; but they soon are roused by the unconscious dropping of the head. On this account, they complain to all around them of the distressing propensity to sleep which they experience. At the same time they suffer from faintings (accompanied by a pulse frequently unequal in respect both of its rythm and volume), and, indeed, continue to undergo, to the end of their wretched life, and in every position of body, the greatest distress. A few days before death, in many cases, the neck is swollen, and the eyes become extremely red, as if from crying. This state of things is sometimes terminated suddenly by a stroke of apoplexy, or more slowly by leipothymia.

The same signs are furnished by percussion in the purulent, as in the proper dropsy of the pericardium; but in the former, the other symptoms are precisely the same as those which exist in the *close purulent vomica*. In the purulent dropsy, the fluid commonly resembles turbid whey,—the thicker portions of it [*quod purulentum est*] being found adhering to the heart like fringes.

Comm. As the author refers to the enumeration of the general symptoms of hydrothorax, I beg to refer to the strictures made by me on that enumeration. As in the case of that disease, the author in this also, confounds the secondary with the primary affection. In judging from the results of percussion, it will be necessary to recollect the observations made on the natural sound of the cardiac region in a former part of this work (III. and *Comm.*); moreover, it must be observed, that although

in hydropericardium, the region of the heart, and indeed often the whole sternum, yields only the fleshy sound described;—and although the probability is, that, when this result is obtained by percussion, the disease is the one now under consideration; it does not follow that this is either necessarily or even certainly the case;—since any other morbid cause existing in the same situation, in the lungs or mediastinum, and producing equal obstruction or displacement, will occasion a like change in the natural sound. When the pericardium contains much fluid (and I have found in it seven or eight pints) the swelling of the præcordia mentioned by our author is very evident in the place of the hollow naturally there. It is hard and resisting, and is caused by the fluid of the pericardium depressing the diaphragm below the end of the sternum. I do not think it so easy as the author says, to distinguish this tumour from the distended stomach.

¶ I am rather disposed to attribute the præcordial tumour to the left lobe of the liver thrust forwards and downward by the depressed diaphragm. This was certainly the case in the two instances of purulent dropsy of the pericardium (Cases of Mr. N——n, and Miss H. P.) given in the present work; and I am the more disposed to adopt this opinion, as well from considering the very frequent morbid enlargement of the liver found in cases of diseased heart, as from observing in other cases, how very often this viscus extends naturally not merely into the epigastric, but into the left hypochondriac region,—occasionally as far as the spleen, often so as to rest on the pyloric half of the stomach. In these cases I am disposed to adopt the opinion of the original author, in preference to that of his commentator, that the præcordial tumor may readily be

distinguished, by its superior degree of resistance, from the distended stomach. TRANS.

The description of the snatches of sleep in the sitting posture, constantly and suddenly broken, and unrefreshing, is very correct, as is also that of the patient's anxiety, and bitter complaints. Indeed nothing can exceed the distressing condition, both physical and moral, of these persons. They cannot enjoy even a few moments of sound sleep in any one posture,—while at the same time, borne down by watching, fatigue, and debility, they are constantly impelled, even in spite of themselves, to yield to a momentary repose which is sure to be broken by a sudden start. It is proper to observe, however, that this state of anxiety, distress, and irresistible propensity to sleep, belongs less to the simple hydropericardium, than to that which is either caused or accompanied by an organic lesion of the heart. The greater part of the distress of these patients arises from their inability to assume the horizontal posture; and this inability is well known to be a certain consequence of an organic affection of the heart. The attacks of syncope, which, in the progress of the disease, become more or less frequent, are owing to the impediments that exist to the natural action of the heart: this connexion is further evinced by the state of the pulse, which becomes then feeble, frequent, contracted, intermittent and irregular. At this time palpitations, properly so called, are seldom observed: but on applying the hand to the heart, we can readily discover, in its obscure and tumultuous movements, that this organ is acting as if surrounded by a fluid, and swimming in it. These local causes of the irregularity of the heart's action are still further strengthened by the effect of the irregular circulation existing in the brain, which irregularity, although itself a consequence of the disease

of the heart, eventually becomes a powerful agent in augmenting the unnatural movements of this organ.

The subjects of hydropericardium habitually have the face of a violet hue, and the lips dark and livid, and in the last days of their existence, the swelling of the throat and redness of the eyes, mentioned by the author, are present. I would, however, observe that these symptoms are seldom so strongly marked as stated, when the disease is idiopathic. I have never seen this disease terminated by apoplexy, and very rarely by syncope,—the final scene of suffering being in general long, most distressing, and yet difficult to be described.

I cannot assent to the correctness of the statement that the symptoms of the purulent dropsy of the pericardium (i. e. pericarditis) are precisely similar to those of the close vomica. On the contrary, whether the inflammation be acute, subacute, or chronic and latent, it is always attended with symptoms peculiar to itself. (See my Treat. on Dis. of Heart.) In the acute variety, the disease is very rapid in its progress, proving fatal on the 4th. 5th. or 6th. day: there are frequent fainting-fits, and a burning pain in the region of the heart. The countenance is extremely pinched, and has a mixed expression of profound depression, irritation, agitation, inexpressible and perpetual anxiety. The respiration is laborious and broken, with slight palpitations and imperfect faintings; and the pulse is small, frequent, hard, contracted and often irregular. Towards the close of the disease, viz. on the third, fourth, or fifth day, the facies Hippocratica is exquisitely marked; and the pain is succeeded by shiverings, prolonged by incomplete faintings, sense of suffocation, and insupportable anxiety. General anasarca now comes on, and the patient usually dies suddenly and unexpectedly while making some trifling exertion.

The subacute variety is less obscure in its signs, principally because one has time to study its various phenomena more perfectly.

The diagnosis of the chronic variety is certainly difficult, and the more so because it is generally complicated with other affections; it has, nevertheless, some characteristic signs. In it there is general anasarca, the countenance is swollen, the lips violet, the præcordia painful, and there is almost constantly a troublesome convulsive cough; there are frequent imperfect fits of syncope; the respiration is short, quick, oppressed, and attended by a sense of weight about the lower end of the sternum.

The condition of the circulation varies much: the action of the heart being sometimes regular, and sometimes indicated rather by an obscure sort of vibration or *bruissement*; the pulse, always frequent, is sometimes regular, sometimes irregular, and occasionally intermittent.

Besides these radical marks of the pericardiac affection, there are often other symptoms depending on morbid complications;—for example, palpitations, sudden startings from sleep, &c. when there is disease of the heart;—pain in various parts of the chest, dyspnœa, cough, &c. when the lungs, pleura, or mediastinum is inflamed.

The appearances of the fluid on dissection are correctly described; but these vary according to the degree of rapidity of the disease. When the inflammation has been acute and of short duration, the fluid is more turbid, more flaky, redder and more truly purulent than in the chronic disease.

The fringy matter mentioned by Avenbrugger as found adhering to the heart in these cases, is a well-known secretion peculiar to the inflammation of serous membranes.

In bringing these observations to a conclusion, I must observe that the author, in his account of Pericardiac Dropsy, has been much less correct than in his account of the preceding diseases. Indeed, almost all that he has said on this subject is either vague, or obscure, or insignificant, or even false. These defects are, doubtless, owing to his having had too slight experience of this particular disease.

THIRTEENTH OBSERVATION.

Of the symptoms of a copious extravasation of Blood.

XLVII. The causes of a large extravasation of blood into the cavity of the chest have been noticed in the Scholium of xxxi. The following are the symptoms of this affection.

SCHOL. There is incessant and indisable anxiety and oppression at the præcordia and on the chest, while there is constant jactitation of the body, and complete intolerance of the horizontal posture. Percussion elicits none of the natural sound over the space occupied by the extravasated blood. In all cases the pulse is extremely contracted, frequent, and irregular in every way. The respiration is extremely laborious, with a frequent cough, and broken by profound sighing. All the veins become flaccid, and the eyes are at first red but ultimately pale. Cold sweats &c. follow, and the patient dies stertorous.

These are the symptoms when the blood flows into the cavity of the pleura without any accompanying lesion of the lungs: when these are wounded, there is also bloody expectoration, and a passage of air to and from the wound in the parietes of the chest.

Comm. The symptoms accompanying this affection are faithfully described; but it is very rarely that they exhibit so regular and measured a progress as the author's account might lead us to infer.

FOURTEENTH OBSERVATION.

Of Aneurism of the Heart.

XLVIII. When the heart becomes so much distended by blood, accumulated in its auricles and ventricles, as to be unequal to propel forward its contents, it frequently becomes thereby enormously dilated. This dilatation has been called *Aneurism of the Heart*.

Comm. Under the term *Aneurism of the Heart*, the author describes merely a recent and simple distension of this organ, a transient symptom of other diseases, and not the organic affection of slow growth, usually and properly denominated *Aneurism*. It would even appear that the author was unacquainted with this class of diseases.

SCHOL. We frequently observe this state of the heart on dissection, (1.) in sudden and extensive peripneumonies of both lobes at the same time, and (2.) in those fatal inflammatory diseases which are noticed towards the end of the Scholium on XXII.

The pathognomonic sign of this affection is the complete fleshy sound on percussion existing over a considerable space in the region of the heart. Whenever this sound is perceptible in the acute peripneumony it is a sign that the patient will not survive twenty-four hours: in fact, he is already at the last gasp, and is speedily carried off as in apoplexy, unconscious of his fate.

In the second class of inflammations, the sign is equally fatal, but is attended by different symptoms. In this case, the patients suffer dreadful anxiety, and by the constant jactitation of their limbs, are perpetually uncovering themselves. Older persons, indeed, bear more tranquilly their sufferings; but the younger are pertinaciously restless and violent, struggling and talking, attempting to get out of bed, demanding their clothes, and endeavouring to walk or go about their usual occupations. Meanwhile the eyes become dull, the cheeks livid, and the nails and extremities are tinged with a leaden hue, and death is ushered in by cold sweats, and the gradual extinction of the pulse and respiration.

CEDANT HÆC MISERIS IN SOLATIUM, VERIS AUTEM
MEDICINÆ CULTORIBUS IN INCREMENTUM ARTIS: QUOD
OPTO!

Comm. The observation of the author respecting the recognition of his distension of the heart, holds equally true of the real dilatation or aneurism, which can always be certainly ascertained by this means. It is even possible to detect by percussion not only the *species* of aneurism, i. e. whether with thick or thin parietes; —but even, in certain cases, the particular *part* of the organ that is enlarged. This nicety of diagnosis, however, I must admit not to be of easy acquisition, and to require much practical experience and tact.

The concluding wish and prayer of the author have not been made in vain. This little Treatise, as every candid practitioner may readily convince himself, contains most luminous precepts respecting the practice of percussion, and most exact and faithful observations on several diseases which were previously either misunderstood, singularly neglected, or respecting which very erroneous notions were for the most part entertained;

Indeed we cannot feel too much gratitude towards a man who consecrated the greater part of his medical life to such painful and minute observation, and who was thereby enabled to make such valuable discoveries. Unquestionably, Avenbrugger has neither seen nor said every thing, relating to the subject of his treatise; there are even some diseases which he has not properly understood; but when we consider at what time (1760) he wrote, and recollect what false notions were then entertained respecting the diseases mentioned by him,—even setting aside his great discovery of *Percussion*,—we must admit that he has done great things for the improvement of the art, in one of the least advanced departments of practical medicine.

END OF THE TREATISE ON PERCUSSION.

On Mediate Auscultation :

**BEING A BRIEF OUTLINE OF THE METHOD OF
DISTINGUISHING**

DISEASES OF THE CHEST

BY MEANS OF THE STETHOSCOPE ;

EXTRACTED FROM

THE ORIGINAL TREATISE OF M. LAENNEC,

PUBLISHED IN MDCCCXIX.

Dr. Laennec was indisposed, but his colleague Dr. Cayol pointed out to me several cases where the information gained by the application of the *Stethoscope* was useful in ascertaining the nature of the disease. I found that it would require more time than I had to bestow to make myself fully acquainted with the use of this instrument; but I observed enough to convince me that much useful information is to be acquired through the medium of this instrument in distinguishing the diseases of the different viscera of the thorax.

Dr. Recamier, one of the physicians of the Hotel Dieu, informed me, whilst going round his wards, that he could accurately discover the extent of injury in most diseases of the lungs by means of the cylinder, which he carried constantly in his hand.

It has been asked in reference to Dr. Laennec's discovery, what it will avail us to know the exact situation of an ulcer in the lungs, or whether it is a little larger, or smaller, than we believed?—whether we shall be better able to cure an organic affection of the heart or large blood vessels, by knowing the particular part affected? The remark is futile, and has a tendency to check philosophic research. To know the nature and extent of a disease is surely the first step in our progress to the adoption of rational means of cure; and though the diseases particularly alluded to, are, unfortunately, beyond the known powers of medicine, the profession has not assuredly arrived at that degree of perfection to entitle us to pronounce that they will always remain so. But setting aside other advantages, it must surely be highly satisfactory to every ingenuous mind to know the exact nature of the disease under which a patient labours, even when it is known to be incurable.

CLARK. *Med. Notes.*

From considerable experience, as great perhaps as that of any body in this country, we have convinced ourselves of the value of the Stethoscope as a means of diagnosis in the diseases of the chest; and the observations we have had opportunities to make, induce us to place implicit confidence in the finer distinctions mentioned by Laennec, which we have not yet acquired skill enough to reach. Any one who will take the trouble to apply the cylinder with tolerable attention and adroitness, to the chests of half a dozen patients in an hospital, will easily satisfy himself of the great diversity to be observed in the action and rhythm of the heart, and in the sounds caused by respiration; and as these depend on the physical state of the organs, the one is a certain indication of the other.

DUNCAN. *Edin. Journ. July, 1820.*

ON MEDIATE AUSCULTATION.

THE application to the diagnosis of diseases of the Chest, of Auscultation by means of an instrument—hence termed *Mediate Auscultation*—was first made in 1816 by M. Laennec. The full development of this new system of diagnostics is given in the invaluable treatise of that author, and is now well known to many members of the profession in this country, as well in the original, as through the English Translation of it published some years since. As it is very probable, however, that the present volume may come into the hands of many who have not seen the work of M. Laennec, in either form, I have thought it necessary to introduce, in this place, such extracts from it as may, at least, render the subsequent histories intelligible to this class of readers. I beg, however, explicitly to state that the account about to be given of this system, although sufficient for the purpose mentioned, is inadequate to direct the practical application of it, or even to convey any just notion of its importance. In order to obtain this knowledge, the work of M. Laennec must be consulted.

This method is founded on the well-known property of solid bodies to transmit sound with much greater readiness than is done through the air. In the present case, this

property is applied to the discovery of the sounds produced in the interior of the chest, by the natural motions of the organs of circulation and respiration. From the modifications of these sounds, in health and disease, a judgement is formed respecting the actual state of the organs.

The instrument used for this purpose is called the *Stethoscope*. This consists simply of a cylinder of wood, a foot in length, perforated in its centre longitudinally, by a bore three lines in diameter, and formed so as to come apart in the middle, for the benefit of being more easily carried. One extremity of the cylinder is hollowed out into the form of a funnel to the depth of an inch and a half, which cavity can be obliterated at pleasure, by a piece of wood so constructed as to fit it exactly, with the exception of the central bore which is continued through it, so as to render the instrument in all cases, a pervious tube. The complete instrument,—that is, with the funnel-shaped plug infixed,—is used in exploring the signs obtained through the medium of the voice and the action of the heart; the other modification, or with the stopper removed, is for examining the sounds communicated by respiration. A solid cylinder, without any perforation, is the best instrument for exploring the action of the heart; but as this form is not so good for examining the voice and respiration, the perforated cylinder is commonly used for all purposes. On all occasions, the cylinder should be held in the manner of a pen, and the hand of the observer should be placed very close to the body of the patient, to insure the correct application of the instrument.

The end which is applied to the patient,—that, namely, which contains the stopper or plug,—ought to be slightly concave to insure its greater stability in application; and when there is much emaciation, it is sometimes necessary to insert between the ribs a piece of lint or cotton, or a leaf

of paper, on which the instrument is to be placed, as, otherwise, the results might be affected by the imperfect application of the cylinder. The same precaution is necessary in the examination of the circulation in cases where the sternum, at its lower extremity, is drawn backwards, as frequently happens with shoemakers, and some other artificers.

There are three kinds of exploration by the stethoscope, viz. that of the Voice—the Respiration—and the Circulation.

I. THE VOICE. When a person in health speaks or sings, his voice excites in the whole parietes of the thorax a sort of vibration, which is easily perceived on applying the hand to the chest. This phenomenon is no longer observable when, through disease, the lungs have ceased to be permeable to the air, or are removed from the contact of the parietes of the chest by an effused fluid. This sign is of inferior value, since a great many causes occasion varieties in the intensity of the vibration, or completely destroy it. For instance, it is little sensible in fat persons, in those whose integuments are considerably flaccid, and in those who have a sharp and weak voice. Anasarca of the chest completely destroys it, even when the lungs are quite sound. In any case it is only very perceptible at the anterior and superior part of the chest, on the sides, and in the middle of the back. From these and other causes, we can derive little practical benefit from attending to this particular circumstance.

On making use of the cylinder with the view of further investigating this phenomenon, it was soon found, as indeed might have been expected, that it conveyed the peculiar vibration much less distinctly than the bare hand. It was also ascertained that the degree of intensity of the vibration varied in different points of the thorax. The places where it is

most distinct are the axilla, the back—between the spine and the edge of the scapula, and on the anterior and superior part of the chest near the angle formed by the union of the clavicle with the sternum. When we apply the cylinder to these points, the voice appears stronger and nearer to us; in the others, on the contrary, particularly in the inferior and posterior parts of the thorax, it seems weaker and more remote.

The only diseases to the diagnosis of which the exploration of the voice has been applied with success are, Phthisis Pulmonalis, Pleurisy, and Pneumo-Thorax.

If we apply the stethoscope to the larynx or trachea of a person in health when speaking, we hear the voice of the individual as if coming directly from the point on which the instrument rests, and reaching our ear through the canal in it. In the second stage of phthisis, when tubercular excavations exist in the lungs, if the stethoscope be applied to the chest, over the site of one of these, the same transmission of voice through the tube is perceived. This phenomenon has been named *Pectoriloquism*: it is the pathognomonic sign of the morbid state just mentioned.

In cases of Pleurisy, with effusion of serous fluid, there is a partial transmission of the voice, somewhat resembling pectoriloquism, yet peculiarly modified so as to be easily distinguished from it: this is named *Hægophonism*, from a supposed resemblance that it bears to the voice of a goat.

In certain cases of tubercular phthisis, and in that particular variety of Pneumo-thorax, where the accompanying empyema communicates with the bronchia by means of a fistulous opening, the exploration of the voice conveys to the ear a peculiar sound, which bears a striking resemblance to that emitted by a cup of metal, glass or porcelain, when gently struck with a pin, or into which a grain of sand is

dropped. This sound has been named *Metallic Tinkling*, and is considered pathognomonic of the triple lesion above mentioned.

II. RESPIRATION. On applying the cylinder, with its funnel-shaped cavity open, to the breast of a healthy person, we hear, during inspiration and expiration, a slight but extremely distinct sound, answering to the entrance of the air into, and its expulsion from, the air cells of the lungs. This sound may be compared to that produced by a pair of bellows whose valve makes no noise, or, still better, to that emitted by a person in a deep and placid sleep, who makes now and then a profound inspiration*. We perceive this sound almost equally distinct in every part of the chest, but more particularly in those points where the lungs, in their dilatation, approach nearest to the thoracic parietes, as, for instance, the anterior-superior, the lateral, and the posterior-inferior regions. The hollow of the axilla, and the space between the clavicle and superior edge of the trapezius muscle, exhibit the phenomenon in its greatest intensity. It is equally perceptible on the larynx, on the exposed or cervical portion of the trachæa, and, in many persons, through the whole tract of this canal to the bottom of the sternum; but on the trachæa, and in some degree at the root of the bronchiæ, the respiratory sound has a peculiar character, which evidently indicates the transmission of the air through a larger space than the air cells. In this position, also, it often seems as if the patient, in inspiring, inhales the air through the tube of the stethoscope, and expels it by the same, during expiration.

To judge correctly of the state of respiration by this method, we must not rely on the results of the first mo-

* Its precise character will be best ascertained by applying the naked ear to the chest of a child. *Trans.*

ments of examination. The sort of buzzing sensation often caused by the first application of the instrument, the fear, restraint, and agitation of the patient, which mechanically lessen the force of respiration, the frequently inconvenient posture of the observer, and the great sensation occasionally produced by the action of the heart,—are all causes which may at first prevent us from correctly appreciating, or even from hearing at all, the sound of inspiration and expiration. We must therefore allow some seconds to pass before we attempt to form an opinion.

It need hardly be observed that there must be no noise whatever in the vicinity of the patient. The intervention of clothing, even when of considerable thickness, does not greatly diminish the sound of respiration; but we must be careful that there is no friction between this and the instrument, as this circumstance, especially if the clothes are of silk, or of a fine hard stuff, may mislead us by exciting a sensation analogous to that produced by respiration. Fatness, even when excessive, and anasarca of the chest, seem to have no notable effect in diminishing the peculiar sound. The sound is more distinct in proportion as the respiration is more frequent. A very deep inspiration made very slowly will sometimes be scarcely audible, while an imperfect inspiration, such, for instance, as hardly at all elevates the chest,—provided it be made quickly, may produce a very loud sound. On this account, when examining a patient, more especially if we have had but slight practice with the instrument, we should desire the respiration to be performed rather quickly. This is, however, a very unnecessary precaution in most diseases of the chest, as the frequent presence of dyspnœa necessarily renders the respiration quick. The same is true of fever, and the agitation caused by nervous affections.

Many other causes, and especially the age of the individual, alter the intensity of the sound. In children, respi-

ration is very sonorous, even noisy, and can be heard easily through very thick clothing. In them the close and forcible application of the instrument, to prevent the friction of the garments, is unnecessary, as any noise that might arise from this cause is lost in the intensity of the other. The respiration of children differs, also, from that of adults in other respects besides its intensity. It is impossible to describe this peculiarity, but it will easily be understood by comparative trials. It appears as if, in children, we could distinctly hear the dilatation of all the air cells to their full extent; whilst, in adults, these seem as if, from their stiffness, they could only bear a partial dilatation. This difference of sound is much less marked in expiration than inspiration. The dilatation of the chest in inspiration is also greater in the child, and both these peculiarities are more remarkable as the child is young; they continue, in a greater or less degree, to the period of puberty or a little beyond it.

The sound produced by respiration varies, also, very much in its intensity in different adults. In some men it is scarcely perceptible unless they make a very deep inspiration, and even then, although sufficiently distinct, it is not one half so audible as in the majority of persons. These individuals have generally a rather slow respiration, and are little subject to dyspnœa, or breathlessness, from any cause. Others, however, have the respiration very sensible even during a common inspiration, without being, on this account, at all more subject to shortness of breath than the former. Some few individuals, again, preserve through life a state of respiration resembling that of children, and which is therefore denominated *puerile*, in whatever age it may be perceptible. An adult cannot, by any effort, give to his respiration the sonorous character of childhood; but in some morbid states, the respiration spontaneously acquires it, without being, at the time, performed more forcibly than usual. This is particularly the case when one whole lung,

or a considerable portion of both lungs, is rendered impermeable to air through disease, especially acute disease. In the sound portion of the lungs, in these cases, the respiration is perfectly similar to that of children. The same thing is observable throughout the whole extent of the lungs in some cases of fever, and in certain nervous diseases.

When we can distinctly perceive, and with a uniform intensity, the respiratory murmur in every part of the chest, we may be assured that there exists neither effusion into the cavity of the pleura, nor any species of engorgement in the substance of the lungs. On the other hand, when we find the respiration is not to be distinguished in any particular point, we may safely conclude that the corresponding portion of the lungs within, is become impermeable to the air from some cause or other. This sign is as easy to be perceived as the presence or absence of the sound, in the percussion of Avenbrugger, and affords precisely the same indications. With the exception of some peculiar cases, in which the simultaneous employment of the two different methods gives us signs which are completely pathognomonic,—we may state it as a general fact, that the absence of the sound on percussion coincides uniformly with the absence of respiration, as ascertained by the stethoscope. Accordingly, this failure of respiration, existing in a greater or less degree, and over a greater or less extent of surface, is found to be a principal distinctive sign of Peripneumony, Pleurisy, Hydrothorax, and all other diseases, which in any way obstruct or impede the natural action of the lungs.

The natural sound of respiration is further modified by being combined with other sounds, in certain morbid states of the lungs. These various modifications have been denominated *the Rattle*, and consist of four principal varieties.

1. *The Crepitous Rattle.* This bears some resemblance to the crepitation of salt in a heated vessel, or to the sound emitted by healthy lung when compressed in the

hand, only stronger. This variety is the pathognomonic sign of peripneumony, in the first degree ; it exists also in œdema of the lungs, and sometimes in hæmoptysis.

2. *The Mucous Rattle.* *The dead Rattles* of the vulgar is the extreme degree of this variety. It is produced by the transmission of the breath through fluids accumulated in the trachea or bronchia. It furnishes important indications in pulmonary catarrh, phthisis pulmonalis, hæmoptysis, &c.

3. *The Sonorous Rattle.* This is more variable in its characters than the former species. In this, the sound, more or less deep, is sometimes extremely loud, resembling at different times, the snoring of a person asleep, the bass note of a musical instrument, or the cooing of the wood-pigeon. This variety is of inferior value as a diagnostic : it is usually produced by the partial obstruction or narrowing of a bronchial tube.

4. *The Sibilous Rattle.* This is also varied in its character. Sometimes it is like a prolonged whisper of various intonation ; sometimes it is very momentary, and resembles the chirping of birds, the sound emitted by suddenly separating two portions of smooth oiled stone, or by the motion of a small valve. These different kinds often exist together in different parts of the lungs, or successively in the same part. The peculiar nature of the sound, and the appearances on dissection, prove the sibilous rattle to be owing to minute portions of very viscid mucus obstructing, more or less completely, the small bronchial ramifications.

III. THE CIRCULATION. The action of the heart, as explored by the Stethoscope, is studied under three different relations, viz. of the Sound, Impulse, and Rythm.

1. *Of the Sound.* The alternate contraction of the different parts of the heart produces a peculiar sound, of which the individual is himself sometimes sensible during palpitation and in fever. In certain states of disease it can

be heard at some distance from the patient; but this is a very rare case.

In ordinary circumstances the stethoscope, applied between the cartilages of the fifth and sixth ribs, at the end of the sternum, &c., conveys to the ear a distinct sound, even where the pulse is very feeble, or imperceptible. This, in the healthy body, is double, and each beat of the arterial pulse corresponds to this double sound, in other words, to two sounds. One of these is clear and rapid, and somewhat resembles the sound produced by the valve of a pair of bellows: this corresponds to the systole of the auricles. The other is more dull and prolonged, coinciding with the beat of the pulse and with the shock or impulse communicated to the parietes of the chest by the motion of the heart:—it indicates the contraction of the ventricles. The sounds heard at the end of the sternum are produced by the action of the right side of the heart; those between the cartilages of the ribs by the left cavities. In the state of health the sound produced by the contractions of each side is the same.

The sound is the only phenomenon connected with the motion of the heart, usually observable in any other part of the chest beside the præcordial; the impulse of its action being confined to that part.

The sound produced by the action of the heart is great in proportion as the parietes of the ventricles are thin and their impulse feeble: consequently, it cannot be attributed to the percussion of this organ against the side. In a moderate degree of hypertrophia, the contraction of the ventricles yields only a dull sound, like the murmur of inspiration, and the auricle, in like manner, a much less noise than in the natural state. In a high degree of hypertrophia, the contraction of the ventricles produces merely a shock without any sound, and the sound of the auricles is scarcely audible. On the other hand, when the ventricular parietes are

thin, the noise produced by their contraction is clear and loud, approaching to that of the auricles; and if there be a marked dilatation of the ventricles, the sound becomes very smiliar to, and almost as strong as that of the auricles.

In the state of health the sound of the contractions of the heart is no where heard so strongly as in the cardiac region: in certain states of disease it may be heard more distinctly in other places.

The softening of the substance of the heart deadens the sound of its contractions; as does also any impediment of the circulation, whether caused by too much blood, or by an obstacle in the auriculo-ventricular orifices. This latter state, further, gives rise to a dull rustling sound, very like the noise of bellows, or (when stronger) like that produced by the action of a file on wood. The particular orifice affected is, in this case, indicated by the place and time in which the sound is observed. When the orifice is on the left side, we can sometimes feel with the hand a sort of vibratory sensation like that produced by the purring of a cat. In this case, the noise produced by the contraction of the cavity having the obstructed orifice is not only duller, but much more prolonged than in the natural state; insomuch, that the contraction of the auricles is sometimes three or four times slower than that of the ventricles, if the obstruction is in the auriculo-ventricular orifice. This phenomenon may be somewhat diminished in intensity by bleeding, &c. but cannot be altogether removed.

In a healthy person, of moderate fulness, and whose heart is well-proportioned, the sound of this organ is only perceived in the cardiac region, that is, in the space comprised between the cartilages of the fifth and seventh ribs, and under the lower end of the sternum. In thin persons, in the narrow-chested, and also in children, the sound is more extended; being perceptible over the lower third, or even three-fourths, of the sternum, and

sometimes even over the whole of this bone: also at the superior part of the left side, as high as the clavicle, and sometimes, though feebly, under the right clavicle.

When the sounds are confined to the places above mentioned, in subjects of the kind noticed, and when they are much weaker below the clavicles than in the region of the heart, we may conclude that this viscus is well proportioned.

When the sound of the heart becomes more extended, it is heard successively in the following places:—1st, the whole left side of the chest, from the axilla to the stomach;—2nd, the whole of the right side;—3rd, the posterior part of the left side of the chest; and, 4th, the posterior part of the right side. This last is rare. In these cases the intensity of the sound is progressively less in the succession mentioned.

When the pulsation of the heart is heard over a greater extent than what is above stated to be the range of sound of a well-proportioned organ, the individual rarely enjoys good health. If he has not formal dyspnœa, he has, at least, shorter respiration than usual, is put more easily out of breath, and is more subject to palpitation. This state, however, which is that of many asthmatics, may remain stationary many years, and does not always prevent the attainment of an advanced age.

It may be taken as a general fact, that the extent of sound is in the direct ratio of the thinness and weakness of the heart, and, consequently, inversely as its thickness and strength. The size of the organ must also be considered as affecting the extent of the sound.

When the sound extends over all the places above mentioned, we may presume that the heart is increased beyond its natural size, and that this increase is owing to the dilatation of one or both ventricles. This presumption will be strengthened, if the sound is as great under the clavicles or in the axilla, as in the region of the heart. If

it is perceived neither in the back nor right side, but only in the other points mentioned, and if its intensity is nearly equal in all these, we may conclude that the ventricles are moderately dilatated, and that the parietes of the heart are naturally thin. On the contrary, when there is a very strong impulse in the region of the heart, and very little or no sound under the clavicle, we may be assured (if the patient has other general symptoms of diseased heart) that the disease is hypertrophia of the ventricles; while, if he has never experienced any marked disorder of the circulatory organs, we may be certain that the parietes of the left ventricle, although very thick and firm, are still not sufficiently so to constitute disease. In these cases, of course a decided opinion will not be formed without considering all the other circumstances.

2. *Of the Impulse.* The degree of impulse communicated by the cylinder to the ear, is, in general, inversely as the extent of the pulsation of the heart, and directly as the thickness of the walls of the ventricles. In a person whose organs of circulation are well proportioned, this impulse is very little perceptible, often quite imperceptible, especially if the individual is rather fat. When the parietes of the heart are unnaturally thick, the impulse is usually so great as very sensibly to elevate the head of the observer, and sometimes to give a disagreeable shock to the ear. The more intense the hypertrophia, the longer time the impulse is perceptible. When the disease exists in a high degree, we feel as if the heart, in dilating, first comes in contact with the thoracic parietes in one point only, and then with its whole surface, and that it contracts and falls back all at once. The impulse of the heart is only felt during the systole of the ventricles; or if, in some rare cases, an analogous phenomenon accompanies the contraction of the auricles, this is easily distinguished from the former. In fact, when the systole of the auricles is attended by any sensible impulse, this is

perceived to have its seat much deeper ; and most commonly it consists merely of a sort of vibration. In any case, it is very little marked as compared with the sensation produced by the contraction of the ventricles, when these are of a good degree of thickness.

When the parietes of the heart are thinner than usual, no impulse is communicated, even when the sound is the greatest ; and, in this case, the alternate contraction of its cavities is only distinguished by the sound these produce. A strong impulse, therefore, must be regarded as the chief sign of hypertrophia ; and the absence of all impulse as the characteristic of dilatation of the heart.

The impulse of the heart's action is usually perceptible only over the region of the heart, or, at most, over the inferior half of the sternum. When very great, it extends to the epigastrium in cases where the sternum is short. In simple hypertrophia it is usually perceived in no other part ; but when this is conjoined with a certain degree of dilatation, it is sometimes distinctly perceived under the clavicles, and in the right side of the chest. The impulse of the heart's action is, of course, diminished by whatever debilitates the general strength of the system.

3. *Of the Rythm.* By this term is meant the order of the contractions of the different parts of the heart, and the relative succession and duration of these, as perceived by means of the stethoscope. In a healthy and well proportioned heart, these are as follows :

At the moment of the arterial pulse, the ear is slightly elevated by an isochronous motion of the heart, which is accompanied by a somewhat dull, though distinct sound. This is the contraction of the ventricles. Immediately after, and without any interval, a noise resembling that of a valve, or a whip, or the lapping of a dog, announces the contraction of the auricles. This noise is accompanied by no motion perceptible by the ear, and is separated by no interval

of repose from the duller sound and motion indicative of the contraction of the ventricles, which it seems, as it were, to interrupt abruptly. The duration of this sound, and consequently the period of contraction of the auricles, is less than that of the ventricles. Immediately after the systole of the auricles, there is a very short, yet well marked interval of repose, subsequently to which we feel the ventricles swell anew, with the dull sound and gradual progression which characterise their action; then follows the quick and sonorous contraction of the auricles, and again the renewed but momentary immobility of the heart.

Hypertrophia of the ventricles, when in a moderate degree, presents in some respects, only an augmentation of the natural actions of the heart. The contraction of the ventricles becomes less noisy, and more readily distinguishable from that of the auricles. After the latter, the interval of quiescence is well-marked, and contrasts very sensibly with the sound that precedes, and the motion which follows it. But in hypertrophia carried to a very high degree, the rythm of the heart is singularly changed. In this case, the contraction of the ventricles is greatly prolonged. This at first is perceived as a profound and obscure motion, which gradually augments, elevates the applied ear, and then terminates in producing the impulse or shock. This contraction is unaccompanied by any noise, or, if this exists, it is merely a sort of murmur like that of respiration. The interval of repose no longer exists, or is lost in the commencing contraction of the ventricles. The contraction of the auricles is extremely short, and almost, or altogether, without sound; and in some cases the systole of the ventricles seems scarcely over before they begin to swell afresh. In extreme cases there is no sound distinguishable but the murmur abovementioned, and we merely recognise an elevation of the heart corresponding to each beat of the

pulse. In these cases the increased brevity of the auricular contraction is not the consequence of their diminished contractibility merely, but, also, of their contraction commencing before that of the ventricles has entirely ceased.

When the walls of the left ventricle are naturally thin, or have become so from dilatation, the rythm of the heart's actions is quite different. In this case, the interval of repose after the contraction of the auricles is no longer perceptible. The contraction of the ventricles is more sonorous, more resembling that of the auricles, and more approaching the latter in duration. In this condition of the heart, there is, as already observed, a less degree of impulse during the contraction of the ventricles, and a greater extent in the pulsation of the heart. This condition of the organ of circulation is congenital in many cases. It does not necessarily abridge life, but is usually conjoined with a delicate constitution.

Actual dilatation of the heart produces merely an increase of all the characters which indicate a heart with thin parietes. The contraction of the ventricles becomes as short and noisy as that of the auricles; the pulse, consequently, becomes very frequent; and the isochronism of the arterial pulse and the contraction of the ventricles becomes quite undistinguishable. In addition to these signs we must add—the absence of any sensible impulse; the extension of the sound of the heart's pulsation over the whole or greater part of the chest; and the existence of this in as great force under the clavicles and the axilla as in the region of the heart itself. This last character, particularly, may be regarded as pathognomonic, if the patient is not phthisical and pectoriloquous in the places mentioned.

Cases,

WITH DISSECTIONS AND REMARKS;

ILLUSTRATING THE APPLICATION OF

THE STETHOSCOPE AND PERCUSSION

TO THE DIAGNOSIS OF

DISEASES OF THE CHEST.

La science du diagnostic tient le premier rang entre toutes les parties de l'art , et en est la plus utile et la plus difficile. Le discernement du caractère propre de chaque genre de maladie et de ses différentes espèces , est la source des indications curatives : sans un diagnostic exact et précis , la théorie est toujours en défaut , et la pratique souvent infidèle.

LOUIS.

Nous ne cesserons de le redire : dans le diagnostic consiste toute la médecine ; sans lui il ne peut y avoir qu'erreur et que confusion. C'est la plus importante de toutes les connaissances médicales. Toutes les observations n'aboutissent en dernière analyse qu'au diagnostic ; de lui seul découlent les indications curatives fondées sur la raison. Sans lui l'humanité est en proie à l'empirisme aveugle , au hasard destructeur.

ROSTAN.

Si on ne les connaît pas [les maladies du cœur] , on prononcera témérairement sur une infinité de cas ; on fatiguera les malades par des remèdes nuisibles ou inutiles ; on hâtera la mort en traitant de tels maux de même que ceux qui sont entièrement différens ; on sera exposé à être démenti honteusement par les ouvertures de cadavres ; enfin , le danger sera pressant quand on croira qu'il est éloigné.

SENAC.

Le but désirable cependant , l'unique but même de la médecine pratique , doit être , non pas de rechercher , par une stérile curiosité , ce que les cadavres peuvent offrir de singulier , mais de s'efforcer à reconnaître ces maladies à des signes certains , à des symptômes constans.

CORVISART.

CASES, WITH DISSECTIONS AND REMARKS.

CASE I.

Hypertrophia with Dilatation of the Heart.—Diseased Valves.—Dilatation of the Aorta.—Pneumony.

Chichester Dispensary, May 24th, 1822. George Rogers, ætat. 30, Blacksmith, formerly hostler in an Inn. Has been ill about five months, the principal symptoms being pain in the præcordia, indigestion, dyspnœa, palpitation of the heart, incapacity of lying in the horizontal posture, very bad and disturbed sleep, and (for the last month) much cough with mucous expectoration. He is extremely pale, and his whole surface leucophlegmatic. There is a very perceptible fulness and preternatural hardness in the præcordia. The pulse is extremely full, strong, and vibrating, and much fuller and stronger in the left arm than the right. The action of the heart is very great, and occasions a very obvious tremor of the head. [Hepatitis? Hypertrophia of the Heart?—V. S. Mercurial cathartics.]

28th. Examined very slightly and imperfectly with the Stethoscope. Action of the heart perceptible over the whole anterior part of the chest: the *impulse* very great, and the *sound* very loud and peculiar. [Evident Hypertrophia with enlargement of the Ventricles.] Has been bled twice with relief. Blood not at all inflamed. Œdema of the legs. [Laxatives. Infus. Digital.]

June 4th. Has been again bled, with slight relief, and has continued the Digitalis. Has been suffering greatly

from paroxysms of most violent pain, in the cardiac and præcordial regions, coming on suddenly and lasting some time. Has not been able to obtain any sleep for many nights. [Omit Digitalis.—Opium.]

24th. Anasarca extends over the lower limbs and abdomen. Cardiac symptoms as before. [Blue Pill. Squill. Potassæ Supert.]

July 9th. Dispersion of anasarca under diuresis; ptyalism.

16th. Pain in the region of the heart less, and palpitation less violent. Is gone into the country.

August 11th, and 15th. Examined with the Stethoscope more particularly. *Impulse* of the heart's action is very great in the region of the heart, and is very perceptible, though in a less degree, to a considerable distance beyond, viz. under the right clavicle, and over the greater part of the anterior of the chest: the *sound* of the heart's action is very loud in the region of the heart, and is very distinctly perceptible over the whole chest, before and behind, except on the lower part of the right side; it is, however, much louder over part of the right side, especially under the clavicle and along the whole extent of the sternum, than either in the region of the heart, or over the left side. The sound is much more perceptible when the stopper of the instrument is removed; it is thus heard to be extremely loud under the right clavicle, and at the top of the sternum, and resembling the grating noise of a saw with fine teeth, or that produced by the forcible action of the piston in a large empty syringe.* It is much louder under the right clavicle than the left; and it is also heard very dis-

* I noted down these comparisons at the time (as well as every other statement in the case), but in summing up my diagnosis, it will be seen that I neglected to draw from them some very obvious conclusions, respecting the state of the valves of the heart.

tinctly *above* the clavicles. In the action of the heart, as studied by the stethoscope, the sonorous contraction of the ventricles seems to occupy by far the greatest part of the whole space of time,—the contraction of the auricles, and the subsequent interval of repose, being extremely brief. The impulse or shock of the heart's action is not synchronous with the pulse of the radial arteries. I am not sure that there is either swelling or pulsation of the jugulars; but there is a very perceptible tremulous motion of the whole throat, connected with the pulsatile tremor of the head formerly noticed. Applied over the carotids, the stethoscope conveys a very loud sound, especially on the right side, on which the pulsation is much stronger, and accompanied by a jarring vibratory sensation scarcely perceptible on the other. The whole thorax in the region of the heart is very painful on pressure.

The sound of *respiration* is very indistinct over the whole chest, being drowned, probably, by the very loud sound of the heart. *Percussion* elicits a very dull sound in the region of the heart, and to some distance around; but over the rest of the chest the sound is natural. Pulse 100, regular, full and strong, but less strong than formerly.

The swelling in the præcordia is equable, and conveys the idea of a large solid body, like the liver, being suspended there, and hanging down nearly as low as the umbilicus: it seems to extend as far on the left side as the right, and is painful on pressure.

DIAGNOSIS. *Great dilatation of the right ventricle with slight hypertrophia; and moderate dilatation of the left ventricle with very considerable hypertrophia:* In other words:—*Dilatation of both ventricles,—greatest of the right; Hypertrophia of both ventricles,—greatest of the left. Dilatation of the Aorta? Great enlargement of the left lobe of the liver.*

PROGNOSIS. *Death.*

From the date of this examination until his death, which took place on the 15th of October, this poor man suffered all the horrors attendant on an aggravated and incurable disease of the heart. Totally incapable of bearing the horizontal posture, he remained, day and night, seated, generally in his chair, sometimes on his bed; with the constant sense of the most distressing uneasiness, and occasionally of the most acute pain, in the region of the heart,—almost entirely deprived of sleep, not daring to move for fear of inducing a paroxysm of pain and palpitation,—and anasarca over the greater part of the body. His only relief was from blood-letting; and this was very frequently repeated. He took a variety of medicines, partly in hopes of relieving the original disease of the heart and liver, partly with the intention of removing some of the consequences of this,—the anasarca, the pain, and sleeplessness; but with very little benefit, except from blood-letting.

At many different times during the course of the disease, Rogers was affected with a very severe cough, with trifling expectoration, which would come and go, leaving him free from it for many weeks. In the end of September and beginning of October, this again became very troublesome, and the sputa were very viscid, and, for the first time, tinged with blood. About the same time, he was also attacked with a severe dysenteric affection, attended with a considerable discharge of blood by stool.

The last bleeding was on the 10th September, and the blood then drawn (16 oz.) like that of every preceding operation, showed no sign of inflammation.

The body was examined 16 hours after death, by Mr. Wm. Guy, one of the surgeons of the Dispensary, and Mr. Dodds, his assistant, in the presence of Dr. Conolly, Mr. Tully, and myself. Before the dissection took place, I

read to these gentlemen, from my case-book, the note of the Diagnosis transcribed above.

DISSECTION. The whole body extremely pale and moderately anasarcaous.

Thorax. Pericardium of natural character, in every respect except size, and without any mark of inflammation, externally or internally; it contained hardly an ounce of serum. On laying it open, the heart presented itself of an immense size. To our judgment it appeared to be certainly more than double the natural size; but it retained nearly the natural shape. From the apex to the root of the pulmonary artery it measured $7\frac{1}{8}$, and was $13\frac{1}{4}$ inches in circumference, near the origin of that artery and the aorta. The anterior part of the right ventricle was externally of a very pale colour, as if a thin layer of fat were interposed between the muscular substance and its proper tunic. The veins and arteries of the heart were large, especially the former, but quite sound. The muscular substance was throughout of the natural colour, and very firm. The parietes of the right ventricle were from $\frac{3}{8}$ of an inch to $\frac{1}{2}$ an inch in thickness, and uniformly so. The cavity of the ventricle was very large, capable of containing a middle-sized or even a large-sized lemon. The muscoli pectinati were large and strong. The tricuspid valve was sound. The right auricle was enlarged in a degree equal to the ventricle; but it was doubted if its walls were thicker than in the natural condition of the organ: it was full of blood. The left ventricle had a much smaller cavity than the right (by at least a fourth, perhaps a third part), and its walls were rather more than twice as thick, especially about their middle. Their thickness varied in different parts; being in one small spot near the apex only half an inch. The left auricle was one half larger than natural. The mitral valve was sound. The aorta was hard and somewhat contracted at its origin; but, above this, was con-

siderably dilated in its whole extent as high as the arteria innominata. At one point on the right side, and rather posteriorly, there appeared externally a sort of prominent little pouch, formed by a partial dilatation of all the coats of the artery in that spot, and looking, from within, like the impression of a finger or thumb left on a soft substance. All the sigmoid valves of the aorta were much thickened, hard, and rough, feeling between the fingers like pieces of burnt leather. These, as well as two-thirds of the interior of the aorta from its origin to the arch, were incrustated with a close congeries of those minute cartilaginous grains, usually called ossifications, and precisely such as described by authors. [See Baillie, &c.] By an unfortunate and singular oversight, the pulmonary artery and its valves were not examined.

The lungs were united by their whole external surface, to the costal pleura, by adhesions evidently of antient date. The whole substance of the lungs, especially on the right side, exhibited the characteristic induration of peripneumony in a slight degree, except in the lower lobe of the right side which was completely *hepatized*. The left lung was very small, being very much compressed by the enlarged heart.

Abdomen. The intestines were much distended with air, and in many places very livid; but there were no adhesions, nor any positive marks of inflammation. The liver was greatly enlarged, especially in its antero-posterior direction, and most particularly in the left lobe. This adhered firmly to the diaphragm, and extended over the stomach to the spleen, to both of which it was attached. The substance of the liver was harder than natural, and such as is frequently observed in cases of non-inflammatory enlargement; being mottled throughout, by an infinity of minute yellowish-white points which gave to its cut surface something of the appearance of certain porphyries. There was no sign of

inflammation in any part of it. The spleen was very hard and firm. There was no water in the cavity of the abdomen.

REMARKS.

As far as regards the disease of the heart, in the above case, dissection proved the diagnosis to have been substantially correct; although I have now no doubt, that a more minute examination of the patient, and greater attention to the indications supplied by the stethoscope and percussion, would have rendered it much more so. The peculiar grating, loud, vibratory character of the shock and sound of the heart's contractions ought clearly to have pointed out the diseased state of the valves.* This condition was indeed suggested to my mind, but as I made no note of it before the patient's death, I did not think it proper to introduce it among the diagnostics, actually noted in my journal. It will be observed that, among these, I queried the existence of the dilatation of the aorta, which dissection proved to be present. My reasons for suspecting this state of the aorta are given in my original journal, under the date of August 20, in the following words:—"It is chiefly from the circumstance of the great pulsation and sound about and above the clavicle, together with the different state of the pulse in the two radial, and two carotid arteries, that I am led to suspect dilatation of the arch of the aorta." In the present case, I was guilty of a very great oversight, in neglecting the indications respecting the condition of the *Lungs*, furnished—or that might have been furnished—by the exploration of the respiration. In recording the results of my examination of the 11th of August, I stated the sound of respiration to be very indistinct over the whole chest; but as I thought this might be accounted for by the extreme loudness of sound of the heart, I paid

* See Laennec, Tom. i. p. 313 and seq.; or Translation p. 367 and seq.

less attention to the circumstance then than was proper, and entirely neglected to apply the instrument afterwards. Had I done so with the necessary care and precautions, and at different times, and had' conjoined *percussion* with it, I have no doubt that the state of the lungs observed on dissection would have been ascertained with very considerable precision.

CASE II.

Hypertrophia with Dilatation of the Heart in a moderate degree,—
Peripneumony.—Pleurisy.

Chichester Dispensary, April 8th, 1823. James Riddal, ætat 60, a farm servant, from the vicinity of Brighton. Had always enjoyed good health, with the exception of a slight degree of cough occasionally (which never interrupted his labour), until during the last twelve weeks. At the beginning of this period, he was rather suddenly attacked, one very cold day, in the fields, with a moderate degree of pain and sense of oppression in the region of the heart, and dyspnœa, which obliged him to leave his work. Since that day, he says, his disease has continued to the present time, with hardly any change of character, except in having become progressively, but slowly, more severe. The symptoms of his complaint are few in number, but strongly marked. They are as follows:—A constant and very distressing sense of fulness and throbbing in the left præcordia, the latter greatly increased at uncertain intervals, and always, and instantly, by any bodily movement. Every kind of exertion induces, together with the palpitation, great dyspnœa, going off, after a certain time, by repose. Of all kinds of corporeal exercise, none is so distressing as going *down* hill or *down* stairs; going up stairs or up hill, is distressing, but not nearly so much so as the act of descending. His complaints, especially the dyspnœa, are almost always extremely increased by the recumbent posture; on which

account he has been obliged to sit in his chair for many nights successively. Since his first attack, indeed, he has been able to lie down but rarely, and never with the head at all low. The attempt at recumbency on the *left side* is, of the two, most intolerable. The bowels and appetite are in a pretty good state; the tongue clean, and the urine of natural quantity and light coloured. The skin is soft and cool, and the pulse is extremely irregular and unequal, small and feeble. He is very low-spirited. The countenance very anxious, and the lips blue. Pulsation of the jugulars. [V. S. ad unc. x.—Pilul: ex Hydrarg. Pil. et Extract. Hyoscyam. j, o. n.]

15th. The blood not at all inflamed. Has been much easier since V.S. especially in his breath. He has been able to lie down better, and more on the left side. Pulse still extremely quick and irregular, and hardly perceptible at the wrist from its feebleness, although the action of the heart, as felt by the hand, is very great.

STETHOSCOPE. *Heart*.—*Impulse* and *sound* both very great in the cardiac region, the contraction of the auricles and ventricles being very quick. *Sound* of the heart's contraction audible over the whole chest, before and behind, on both sides, but only in a slight degree on the *right back*, (and most without the stopper); more audible under the *right* than under the *left* clavicle.

Respiration. This distinct over the whole chest, except over a considerable space in the cardiac region. Over the same space *Percussion* elicits a dull sound. To this note of examination were subjoined the following DIAGNOSIS and PROGNOSIS:—*Hypertrophia with dilatation of the heart: Death.*

This poor man left Chichester on the following week, and died in about four weeks after. The only thing I have learned of his state after he left me is, that he was jaundiced

for ten days before his death. To Mr. Hugh Ingram, Surgeon of Steyning, to whom I had written respecting the case of Riddal, and who was kind enough to inspect the body after death, I am indebted for the following account of the dissection, which I shall give in his own words :

“ Steyning, May 17, 1823.

DISSECTION. In the right cavity of the pleura was about a quart of bloody serous fluid, strongly tinged with bile. The right lung was much diseased, being more solid than natural, and having all the appearances of previous inflammation and obstruction. No tubercles. The left lung diseased, but not so much as the right. In the pericardium there were about six ounces of fluid of the same character as above described. The heart was larger than natural, its entire structure thickened and bearing evidence of increased action ; besides which the only remarkable circumstance was the Foramen Ovale being open. All the valves were perfect, but the arch of the aorta was dilated to a considerable degree. On opening the abdomen, the liver was found considerably enlarged, more solid and paler in colour than usual. The gall bladder distended with bile, the ducts very much contracted in size, and the common duct impervious. The spleen enlarged and much more solid than usual. The Pancreas considerably indurated. There was nothing particular in the appearance of the other viscera.”

In a subsequent note Mr. Ingram added a few more particulars. The following are extracts :—

“ To your first question whether the pleura was inflamed, I should say slightly so, but there were no adhesions. I should say that the right lung *did* answer to the character implied by the term hepatization : there was a greater degree of firmness about it than was natural. The parietes of the cavities of the heart were unnaturally thick, certainly, but not to a very remarkable degree. There was no ap-

pearance of ossification in any of the vessels, but great dilatation, as if there had been much force used to overcome obstruction. There was simply dilatation of the aorta. The liver was gorged with blood, and of an unhealthy colour. The duct was certainly obliterated, but the cause has not satisfactorily presented itself to the minds of those who examined the body. It does not appear that Riddal ever had jaundice before. The Foramen Ovale was a perfectly distinct and direct opening, but of a size only large enough to admit the end of a common blow-pipe, which was used to expose it."

REMARKS.

The above case is a striking instance of diseased heart, and one in which the diagnosis deduced from auscultation, was very correct, as far as it went. The account of the dissection proves the existence of *Hypertrophia with dilatation*, as had been predicted. The two other morbid conditions of the heart and its appendages,—viz. the patency of the foramen ovale, and the dilatation of the arch of the aorta, certainly were not predicted, yet their existence was by no means contra-indicated by the result of the stethoscopic exploration. As I only saw this man twice, and applied the instrument only once, I had not much opportunity of proving whether the stethoscope afforded any means of detecting the existence of this organic lesion. This point was not at all determined by Laennec, from want of experience. Was the louder sound under the *right* clavicle, owing to the dilated aorta? This coincidence existed in Case I.

As the state of respiration, when I examined this man, was perfect over the whole chest, I have no doubt that the slight degree of peripneumony and pleurisy of the right side, found after death, was of subsequent occurrence, and probably hastened the fatal term.

It is not perhaps very remarkable, that with the slight

degree of patency of the oval hole that existed in this case, there was not more lividity of the surface. The lips were certainly bluish—but not more so than I have seen in many cases of diseased heart, unaccompanied by any direct admixture of the arterial and venous blood.

There is something singular in the suddenness of the invasion of this man's disease. Is it at all probable that any of the organic lesions found after death in the heart could have originated suddenly? Laennec is of opinion (vol. 2, p. 364) that such a condition of the oval hole, as existed in the above case, may occur in this manner; and he founds this opinion on his own cases, as well as on those detailed by Corvisart. The history of Riddal's case, leads me to incline to the same opinion. Before the day on which he was taken ill, his breath was good; from and after that day, he laboured under the paroxysmal dyspnœa, and other symptoms characteristic of diseased heart, in a very marked degree. Can it be supposed that the disease of the lungs and pleura, observed after death, was the primary affection?

CASE III.

Dilatation with Hypertrophia of the Heart.

Chichester Dispensary, April 8, 1823. George Mills, ætat. 63, a strong and hard-working day-labourer, was seized rather suddenly about twelve weeks since, during the prevalence of very severe weather, with oppression and tightness across the chest,^f dyspnœa, &c. accompanied by a very irregular pulse. Since that attack, he has never been able to do any work, although he has attempted it; and has laboured under a constant sense of fulness and oppression about the præcordia, and, occasionally a great tenderness there; great dyspnœa on motion, or any kind of bodily exertion; and, frequently an inability to lie down in bed. He has also been repeatedly affected with sudden and severe pa-

roxysms of the same kind, but in a more violent degree. The bowels have been regular, but the appetite not good. The urine has been sometimes high-coloured and sedimentous, sometimes watery. The legs are now œdematous. The pulse extremely irregular. I saw this man again on the 15th, and examined the chest with the stethoscope. At this time, as before, the pulse was extremely weak and irregular at the wrist, a great many vermicular and hardly perceptible pulsations being succeeded, at intervals, by one moderately full. There was a constant tremulous motion very perceptible in the throat (of the jugulars), but the pulsation of the carotids was found to be very feeble. The face rather florid and vein-shot, but not purplish.

STETHOSCOPE. *Impulse* of the heart, in the cardiac region, very great, sound also louder than natural in the same place, and audible over the whole chest, before and behind, and especially along the *right* side of the sternum. On the back, the sound (owing to the frequency of the heart's contraction) is rather that of a continuous murmur, than of distinct pulsations. With the exception of irregularity of the rythm, there is no other peculiarity in the sound. *Respiration* natural. To this note of the examination, I added the following **DIAGNOSIS** and **PROGNOSIS**: *Dilatation with Hypertrophia of the heart ; dilatation especially of the right cavities. Death.*

I directed this poor man to lose a little blood, as a means of temporary relief, and to take some gentle aperients. I heard or saw nothing of him again until a fortnight afterwards, when his daughter came to the Dispensary for his discharge, and informed me that he had been at work almost ever since I saw him ! I was very much surprised at this, and began to look over my notes of his case, with some mistrust of the fidelity of 'mon cylindre' and its diagnostic. But I had too early and too sad a proof of the truth of both.

Only three days after this (2d May), while in the act of sawing a piece of wood in his own house, he was suddenly seized with one of the fits, to which, since his first attack he had been occasionally subject, and which consisted (as described to me by a neighbour, for I never saw him so affected,) of a violent sense of oppression and palpitation in the cardiac region, with dyspnœa, a total overthrow of the bodily powers, and a temporary insensibility. On the present occasion, he was described as remaining sensible for some time after the attack, but gradually became more and more insensible, until a perfect state of coma and apoplectic stupor was established. No immediate aid was obtained, and when I saw him the day after, I considered death so inevitable and so near, that I did not direct any blood to be taken away. He however survived more than twenty-four hours thereafter. The body was examined on the day succeeding his death, by Mr. Wm. Guy, Mr. Dodds, and myself. As usual, I chose to commit myself and the credit of my instrument, by a written statement of my expectations. The following was the brief note I read to the gentlemen who kindly assisted me :

“ *Mills.* Whole heart enlarged and thickened ; principal dilatation, of the right ventricle. No contraction of valvular orifices. Lungs sound.”

DISSECTION. All the viscera, except the heart, *particularly* sound. No mark of inflammation or adhesion in any part of the chest, or abdomen. *Heart* of a rounded figure, the apex being quite blunt ; very large, certainly more than one-half—probably two-thirds—larger than natural. The greatest dilatation was in the right ventricle, the parietes of which were about the natural thickness of a heart proportioned to this man's size ; the right auricle enlarged in the same proportion as the ventricle. The left ventricle was also much enlarged, but hardly in so great a degree as the

right; it retained its ordinary superiority of thickness over the left, but its walls, as well as those of the right, were flabby. One of the columnæ carneæ of the left ventricle was enormously enlarged, and looked like a foreign body projecting from the walls. There was no mark of adhesion or inflammation about any part of the heart: and all the valves and orifices in all the cavities, and also all the large and small blood vessels, were perfectly sound. There was a moderate quantity of water in the pericardium. The head was not examined.

REMARKS.

The diagnosis and prognosis in this case, were perfectly correct; and as both were founded on the doctrines of mediate auscultation, as fully developed by the discoverer, there occurs hardly any room for remark. I may take this opportunity, however, of making a few observations on the subject of *hypertrophia* and *dilatation* of the ventricles, in relation to the sign of *impulse*.

Laennec describes three varieties of enlarged heart:—

1. *Simple hypertrophia*, or thickening of the muscular substance, without enlargement or with diminution of the cavities; 2. *Dilatation*, or enlargement of the cavities with diminution of the natural thickness of the parietes; 3. *Dilatation with Hypertrophia*, or enlargement, at once, of the cavities, and increased thickness of their parietes. The characteristic signs of the 1st variety, he states to be a powerful impulse, and a sound duller than natural, and confined to the cardiac region, or its immediate vicinity; the marks of the 2nd are nearly the reverse of these, viz. a preternaturally loud and extensive range of sound, without any impulse, or an impulse less than natural; while the 3d variety combines the characteristic marks of both these, as it combines both their anatomical conditions,—viz. a powerful impulse, a loud sound, and an extensive range of sound. It is only

on the 3d variety that I would here offer a remark. Both Corvisart and Laennec, wherever they speak of this variety, seem uniformly to understand that, to constitute it, the walls of the ventricle must be *increased* in thickness, and consequently, if we adopt this definition literally, and admit the diagnosis laid down by Laennec also literally, we ought to find in no case, increase of impulse, except where the parietes of the ventricles are positively thickened beyond the natural proportion. I apprehend, however, that facts will not be found to accord with this; and I am of opinion that, although not actually so stated by Laennec, he must intend some modification to be understood in certain cases. My own experience would lead me to infer that in cases of enlarged heart, whenever there is no actual *diminution* of the natural thickness of the parietes, although there be *no increase* whatever, the impulse in the cardiac region is still greater than natural. And I cannot help thinking that such must be the meaning of Laennec himself. If the cases in which there is dilatation of the cavities without either thickening or extenuation of the parietes, be not included in Corvisart's class of "Active Aneurisms," or Laennec's "Dilatation with Hypertrophia," they must form a class apart. In the present case, as well as in several others in this volume, although the parietes were not considered by those who saw them as thicker than natural, and although the muscular substance seemed to have only the natural degree of firmness, the impulse in the cardiac region appeared to me to be decidedly greater than natural. On this account, therefore, in interpreting the term Dilatation with hypertrophia, in reference to the sign of Impulse, I shall always include under it all the cases of dilatation in which the ventricular parietes are not positively extenuated, whether they be unnaturally thickened or not.

As bearing directly upon the present subject, I would here beg to suggest a most important caution in the use of the

Stethoscope in diseases, or supposed diseases, of the heart. It is—never to overlook the precept of Laennec, not to explore the circulation, unless during the most perfect state of quietude, both bodily and mental, of the patient. “*We must never deduce any conclusions from the analysis of the heart’s pulsations, unless this has been made after a sufficiently long repose, if the patient has been taking exercise; or during the most perfect calm and quietude, if he already labours under disease of the heart.*” (Tom. II. p. 228). I am the more anxious to impress this caution on the mind of the reader, as it is of especial importance in Dispensary practice, where patients generally walk to the place of examination, and where trials with the Stethoscope are more likely to be made than in private practice. I am conscious of having, more than once, committed serious mistakes, from inattention to this circumstance: and I shall, in the present volume, record one or two instances of the kind, with the view of impressing it more deeply on the attention of the young Auscultator. [See particularly the Case of *James Waller*.]

It will be remarked that the immediate cause of Mill’s death was apoplexy, produced, however, very evidently, by the primary disease of the heart. This termination of cardiac disease has been long observed, and has been rendered famous by two illustrious victims in our own profession, viz. Ramazzini and Malpighi. Corvisart notices the fact (p. 186) in a distinct section, but adds that his own practice had not furnished him with a single example of the kind! This seems to me very singular, if I may be allowed to judge from my own limited experience. Another example of this termination, is given in the present volume. (See the Case of Webb,—VII).

It will also be observed that the invasion of this man’s disease was rather sudden. The truth probably is, that, in

similar instances of apparent attack, there had previously existed, and perhaps for a long period, a certain degree of hypertrophia, a condition, which although eventually fatal, is very compatible with a tolerable degree of health, and even of vigour.

CASE IV.

Dilatation of the Heart.—Hæmatemesis.

Penzance Dispensary, Sept. 21, 1821. Elizabeth Bartlett, ætat. 30. This woman appears to have been always a delicate subject, and attributes the peculiar weakness of her pectoral organs to a severe fall and concussion of the chest, when ten years old. In her twentieth year she was first affected with a short tickling cough, attended by pain under the lower end of the sternum, and dyspnœa, and eventually followed by copious yellow fetid expectoration, night sweats, and general emaciation, which symptoms, after being present altogether three years, in a considerable degree left her. The menses which had been absent half a year, returned, and she recovered flesh and strength, but never got entirely rid of the dyspnœa. Under this state of things, she married, but the menses shortly after became suppressed and have not since made their appearance. During the continuance of the hectic state, above alluded to, she used to suffer from frequent palpitation of the heart, on using any considerable exertion, but not in any very remarkable degree. This symptom, also, remained after the departure of the hectic state, and has continued to increase in frequency and severity to the present time. About five years and a half since, that is about the period of the second suppression of the menses, and a few months after her marriage, she began to suffer from a severe pain in the region of the heart, over a space as large as both hands, and extending from the middle of the sternum, under the nipple, and across the chest half way to the spine. This pain, also, has continued ever

since. It has always been aggravated by any—even the slightest—motion, and when this did not occasion palpitation. Ever since she remembers, she has not been able to sleep on the left side ; formerly she always lay on the right side ; but for several years past, she has borne recumbency only on the back. It is more than twelve months since she began to feel the pained side to be tender externally. It is now extremely impatient of pressure over the whole of the anterior-inferior parts of the chest, around the heart, and she fancies that there has been external swelling of the same part, at different times, during the last half year. The habitual pain in the cardiac region is subject to frequent and often sudden aggravations to an extreme degree of suffering, resembling a spasmodic seizure : and this frequently happens while she is lying still and calm in bed. I have often seen her in this agony (for such it is), which resembles, and no doubt is, a variety of the angina pectoris, although the pain is confined to the cardiac region. Between five and six years since, after having for some time suffered more than ordinary pain in the usual place, she suddenly brought up and discharged as much as three quarts of pure blood. This hemorrhage has continued to recur, after irregular intervals, ever since ; as often as once a month on an average, often more frequently, and in the medium quantity of a pint. She has remarked that the return of the hemorrhage has borne a relation to the degree and frequency of venesection, being more frequent if this operation was rare, and vice versa. She says, the blood thus discharged has always appeared to her to be evacuated by a process, and with a sensation, quite different from that of vomiting (she has taken emetics). *Always* before the evacuation, she has experienced a great increase of pain and oppression in the cardiac region, and also of the dyspnœa; which symptoms are uniformly relieved by the hemorrhage. The blood has never

been intermixed with food or any foreign substance, not even air, and is often very thin, and always dark, like port wine, she says.

She has had no cough for several years. Her face is very pale, as are also the lips; the cheeks have occasionally a hectic flush, but never any tint of blueness. The habitual dyspnœa, in her more tranquil moments, is hardly obvious to the by-standers. She has always been very costive in her bowels, and has vomited frequently during the last six months, but has never brought up a particle of blood on such occasions. Within the last four months, she has, three or four times, passed a good deal of blood by stool, and generally, she thinks, on the day after the evacuation of blood by the mouth. On these occasions, the blood has never been intermixed with feces or even mucus. She brought up a pint of blood yesterday, but has had no stool since. There has been partial anasarca of the legs, arms, breasts, and face, for a good many months, and the whole body has a permanent pallid, shining, leucophlegmatic aspect. There has never been any heat of skin, nor any remarkable deficiency of urine. She has long been affected with leucorrhœa.

Very imperfectly examined with the Stethoscope. The *impulse* and *sound* in the cardiac region are both very great; the latter accompanied by a sort of hissing very distinct; sound very perceptible over the whole chest anteriorly, insomuch as (apparently) to drown the sound of respiration; this at least appears to be very indistinct. **DIAGNOSIS: PROGNOSIS**—*Dilatation of the heart, with Hypertrophia; disease of some of the valves. Death.*

Oct. 19. She has been very ill, and in extreme pain frequently. She has also had some slight convulsive fits. She has brought up blood twice, and passed it once by stool, but not after the other evacuation. Both discharges are venous and unmixed with any foreign matter. The pain is

very great about the præcordia. There is great pulsation visible in the throat. Pulse 130, sharp and small.

The Stethoscope gives a very loud sound in the region of the heart, but the impulse is by no means proportioned to it. **DIAG.** *Hypertrophia only moderate.*

26th. She has been repeatedly bled (the blood very slightly buffed), and invariably with great relief; and this has always been the case from the beginning of her illness. The Stethoscope was again applied for a brief space. The impulse and sound of the heart are both conspicuous: the sound perceptible over both sides of the chest, heard best with the *open* instrument. Respiration audible over the upper part of both sides.

From this period until the beginning of February, 1822, when I last saw her, this poor woman continued in a most deplorable state of suffering, with all the usual symptoms of incurable disease of the heart, and receiving temporary relief only from bleeding, which she was constantly begging to have repeated.

In this miserable state, however, she lingered on for twelve months longer, not dying till February, 1823. For the following brief statement of her subsequent history, and the examination of the body after death, I am indebted to Doctor Barham, who succeeded me in the Dispensary at Penzance, and to whose care and attention this patient was much indebted. I transcribe Dr B.'s own account:—

“Penzance, Feb. 28, 1823.

Dear Sir,—In compliance with your request, I am about to communicate to you a few particulars relative to your former patient, Betsy Bartlett. This poor suffering woman died on the morning of Sunday last (23d), and was examined by myself, and Mr. W. Berryman, about 33 hours after. The course of her symptoms did not present any great variety from the time of my first seeing her till her death, and was,

I apprehend, much the same that you witnessed yourself. In general, she was not more than a week or ten days free from returns of hæmatemesis, the approach of which was always indicated by an increase of that burning pain about the stomach, and head-ache, which in a less degree almost always afflicted her. Her pulse at these times became quick and rather wiry. She had also cough, much beating of the heart, and œdematous swelling of the feet and ankles. Her death appeared to be hastened by a cold which she took in imprudently walking out, and was preceded for several days by severe pains in the abdomen and obstinate costiveness. Her intellect remained clear till she sunk. No treatment I could devise, yielded her any more than temporary relief; and this was chiefly derived from repeated small bleedings, keeping the bowels relieved by clysters and the use of infusion of senna, and, by the help of some friends, enabling her to use a good deal of milk.

DISSECTION. On examining the chest we found considerable effusion in both the cavities of the pleura, as we judged, about half a pint in each, serous, and of a dark colour. The lungs presented no other morbid appearance than an elevation or blistering of the pleura pulmonalis on the posterior part of the right lung, occasioned by a gelatinous fluid poured out beneath it. The appearance occasioned by the subsidence of the blood on the posterior part, was, we thought, more than usually conspicuous. The heart, even through the pericardium, was felt to be enlarged and flabby, which we saw more plainly on cutting through that membrane. It was soft and pale, and its cavities appeared larger than natural. One of the semilunar valves of the aorta was thickened, and the corpus sesamoideum was ossified. On the external surface of the right ventricle, there was a white opaque spot, such as Dr. Baillie describes in Morbid Anatomy; and within the right auricle we found

a considerable coagulum of a fatty appearance, yellowish. The pericardium contained about half an ounce of reddish fluid. On proceeding to the abdomen, a large quantity of dark serous effusion, mixed with some pus, was found there also; but no abscess or ulceration could be discovered in any of the viscera, or parietes. The stomach contained about a quart of dark greenish fluid; it was unusually thin, so that its muscular coat could hardly be distinguished. Its villous coat was in general pale, but some of the vessels were distended with blood. No breach of continuity appeared in any part of the surface, nor about the pylorus, nor in the duodenum. Nothing could be discovered to account for the great pain in the umbilical region, with which she appeared to be in agony during the last days of her life. I thought the liver a little enlarged and hardened; the gall bladder was full of dark green bile, and the other viscera presented nothing remarkable. I certainly had expected to find more disease in the stomach; but having detailed the facts, I will not now detain you with opinions, but remain

Dear Sir,

Your faithful obedient servant,

THOS. F. BARHAM."

In a subsequent communication with which Dr. Barham favoured me, some further particulars respecting the morbid appearances are given. I shall, on this account, subjoin some extracts from this letter also:

"In your diagnosis you anticipated 'moderate hypertrophia.' Mr. Berryman and myself were decidedly satisfied that the parietes of the heart could not be considered as at all thickened, but the contrary; they were also very soft, flabby, and pale. We did not observe any unequal growth of the parts of the heart. You inquire concerning the degree of general enlargement. On this point I cannot pretend to be exact, not having that every-day practice in

necrotomy which alone can enable one to mark the nicer shades of morbid deviation ; but I should say it appeared to me full half as large again as the natural heart, that is, supposing its cavities filled, but not so much heavier when empty. The aorta did not as far as we observed present any morbid appearance beyond what we have mentioned. The lungs were not examined further than by a cut made here and there to a small depth into their substance."

REMARKS.

As this was one of the first cases in which I used the Stethoscope, and as the explorations were always very incomplete, I should not have been much disappointed if the dissection had proved my diagnosis to be much more incorrect than it was found to be. As it was, the only essential difference between my recorded anticipations and the actual appearances, was in regard to the degree of thickness of the ventricles. From the degree of impulse observed, I expected some increase of thickness, but the contrary state was found, as appears from Dr. Barham's excellent report. This is one of the instances on which the remarks appended to Case III. (p. 100), on the import of the sign of Impulse, are founded; and I beg to refer to these remarks, as tending to explain the error in my diagnosis. In the present case, indeed, there may very fairly be adduced another, and perhaps more substantial reason, for the discrepancy between the diagnosis and the morbid anatomy of the case: viz. the long interval of time that intervened between the date of the explorations and the patient's death. During the period of sixteen months that the patient survived my last examination, the decrease of the density of the parietes of the heart, was not only a possible, but an extremely probable event. In this case, the exploration of the respiration was much more imperfect than that of the circulation. From the early history of this woman, as given by herself and detailed in the case,

I had thought it probable that the lungs might have afforded some marks of a pulmonary cicatrix ; but this did not appear to be the case.

Was the occasional excessive pain, referred to the cardiac and epigastric regions, in this case, owing to the temporary superfluity of blood in the cavities of a heart, unable, yet striving, to propel it ; and of which, the Hæmatemesis was, at once, the effect and remedy ? Or, did it, in any degree, depend immediately on the morbid condition of parts in the stomach, essentially constituting the hemorrhage ?—Is it certain, that the affection of the heart was the primary, and the Hæmatemesis the secondary disease ? Or, is it not more probable, that the hemorrhages from the stomach and hemorrhoidal veins, as well as the cardiac affection, were consequences of the pathological state which constituted, or was immediately connected with, the chlorotic suppression ? The disease here was, no doubt, of a complicated nature ; and I believe there is no more common error in practical, as well as in pathological medicine, than that of seeing only one of the many morbid conditions that so usually coexist in the same subject. It will be observed that hardly any of the Cases recorded in this volume were *simple*.

CASE V.

(Supposed) Hypertrophia with Dilatation of the Heart, and valvular disease.

Cornelius Goble, ætat 60, a shepherd of the parish of Burpham, near Arundel, was admitted a patient of the Chichester Dispensary on the 17th Dec. 1822, under the care of my friend Dr. Conolly. I did not see this man on his first visit, and therefore take the following note of his case from Dr. C.'s journal :—"Has been ill twelve months. His principal complaints are—Pain of epigastrium ; occasional pain (he says) of his *heart* ; dyspnœa, greatly aggravated by lying down, and by bodily exertion, insomuch that he is frequently obliged to stop while walking, and goes up stairs

with difficulty ; slight cough. There is considerable enlargement of the epigastrium, with some degree of tenderness on pressure ; the appetite is bad, but the bowels regular. There is some swelling of the ankles, and the urine is scanty and high coloured ; nose inclining to purple. Pulse not the same in both wrists, less distinct in the left." Leeches and a blister were ordered to be applied to the epigastrium, and he was directed to take a pill every eight hours, consisting of one grain of blue pill and four of Extract : Hyoscyami, and a gentle saline aperient twice a week. He returned after fourteen days, his symptoms being somewhat aggravated in degree, but the same in kind. On this occasion I saw the man, and examined his chest with the Stethoscope. The following is a literal transcript of my note of the exploration, taken at the time, and my diagnosis, founded thereon :

Although the pulse is just barely perceptible in both the radial arteries, at the wrist, the *impulse* of the heart's action is preternaturally great in the cardiac region. It is accompanied, however, by very little *sound*. The impulse of the heart's action is perceptible to some little distance *below*, towards the left side of the præcordia, but no where else. The *sound* is not audible to any distance, on the left side, beyond the immediate region of the heart ; of course, neither on the back, nor under the clavicle ; it is, however, perceptible over the greater part of the *right side* anteriorly ; and near the middle, about a couple of inches to the right of the sternum, the sound is extremely loud, and possessing the *grating* or *sawing* character indicative of valvular degeneration, more distinctly marked than I have ever before perceived it. But for this *grating* accompaniment, perhaps even in this spot the mere sound of the heart's contractions is not very loud. The sound of *respiration* is natural wherever explored, except that it is accompanied by a *sibilous rattle*.

Percussion of the chest elicits a good sound, and equally so, on both sides, except in the cardiac region, where the sound is very dull.

N. B. There is no pulsation of the carotids, but a throbbing undulation in the jugulars.

DIAGNOSIS. *Hypertrophia (perhaps without dilatation) of the left, and with slight dilatation of the right ventricle. Contraction (from ossification or cartilaginous degeneration) of one of the valvular orifices.*

PROGNOSIS. *Death.*

With the view of procuring temporary relief I recommended the loss of a few ounces of blood.

Within a week from the period of this examination, the poor man died. The only particulars I could learn respecting the circumstances under which this event took place, were, that he was suddenly attacked with some violent affection of the chest, followed by insensibility, which proved fatal (as far as I remember) within twenty-four hours.

REMARKS.

I regret extremely that I had no notice of this man's death at the time of its occurrence, as I thereby lost the opportunity of ascertaining, by the unequivocal test of dissection, the correctness or incorrectness of my diagnosis, in one of the most striking instances which I had met with; and in which I was disposed to rely more on the certainty of my predictions, than in most of the other cases of diseased heart that have come under my notice since I practiced mediate auscultation. The site of the sound indicative of a contracted orifice in the above case, with the total absence of it on the left side, would lead certainly to the inference that the impediment was on the right side of the heart; yet, considering the extreme rarity of such a degeneration, compared with its frequent occurrence on the left

side, the probability perhaps is that the contraction was in the left auriculo-ventricular opening. (See Laennec, vol. 2. p. 319; and Corvisart, p. 209).

It is worthy of observation that there existed, in a very marked degree, in the above case, a pulsation of the jugular veins, a symptom which, although mentioned by Lancisi, and considered by Laennec (vol. 2. p. 263) as one of the most constant of the common symptoms of hypertrophia of the right ventricle, is rejected by Corvisart as equivocal.

CASE VI.

Contraction of the Mitral Orifice.—Slight dilatation of the Heart.—Chronic Peripneumony.—Anasarca of the Lungs.

Chichester Dispensary, April 18th, 1822. William Daniel, ætat 48. About twenty years ago this man was first affected with a complaint of the chest, immediately succeeding a rheumatic fever with inflamed joints, &c. Ever since this time he has been subject to a chronic disease of the chest, chiefly marked by winter cough (relieved by supervening expectoration), habitual dyspnœa aggravated by motion, palpitation of the heart, &c. Although all these symptoms have existed, more or less, during the above-mentioned period, it is only within the last two or three years, that his health has been decidedly broken by severe attacks incapacitating him for labour. Since this aggravation of his disease, the habitual dyspnœa has been very considerable, and greatly increased by motion, and he has had at times, much cough. His general health has, nevertheless, been good, and his sleep has been very good, and with the head as low as usual. He has been frequently in the Dispensary before, and always relieved by blood-letting and blisters. At present he is suffering from a recent aggravation of his ordinary complaints. His cheeks are purplish. The pulse is very irregular, and the heart is felt pulsating very distinctly in the Epigastrium.

It would be tedious, and perhaps useless, to transcribe at length, the numerous reports of this man's case and treatment, recorded in the journals of the Dispensary. I shall therefore give simply a brief outline of the case, except in such points as seem to bear particularly on the subject of the diagnosis, or relate to the morbid appearances found after death. The general characters of his disease, given above, continued to the last. His habitual dyspnœa suffered numerous aggravations, and he had frequent attacks of severe cough, with little expectoration. On the whole, he suffered little positive pain, but constant *uneasiness* in the region of the heart, amounting perhaps to *pain*, during the action of stooping, a position, he remarked, that distressed him beyond all others. In June, his lower extremities became anasarcaous for the first time, and this state never left him except for a time, under the use of diuretics (*Digitalis*). It was observable throughout the whole course of his disease, except the last month, that he lay with his head very moderately raised, and that he could lie on either side, although best on the left. During the long period of his illness the pulse was constantly irregular, except in the months of August and Sept. 1822, when it was pretty regular, varying in frequency from 54 to 90, but commonly between 60 and 70. This change succeeded the first effective trial of the *digitalis*, and the consequent removal of the external anasarca, and was accompanied by great amelioration of the *habitual* dyspnœa. During the last month of his life there was for some time a very copious thick yellow expectoration, but not purulent nor bloody. The treatment of this case was confined to general and local bleeding, and blisters, the use of diuretics, and the occasional use of opiates and other temporary measures to relieve symptoms. V. S. gave great and invariable relief, and was, in consequence, very frequently had recourse to, often by my advice,

repeatedly at the pressing instance of the poor man himself. The blood was, with one exception, I believe, invariably buffy, and cupped. Notwithstanding this mark of inflammation, it is to be observed that there was never heat of skin, nor febrile stricture of the surface. Next to V. S., the digitalis, after the appearance of the dropsical state, was productive of the greatest relief. After a short time, this medicine almost certainly relieved the dyspnœa, palpitations, &c., at the same time that it carried off the visible dropsy. But its benefits were only temporary.

The first time I examined Daniel's chest, by the stethoscope, was on the 27th August, 1822, a few weeks after the removal of the anasarca, and alleviation of his dyspnœa, &c., by the digitalis. At this time he had no cough, but his breath was beginning to get worse than it had been for a few weeks before. The following is the note of this exploration, in the Dispensary Journal:—

The Heart. Action extremely irregular,—a great many short and quick contractions of the ventricles being followed by one or two slow ones: contraction of the auricles little perceived. *Impulse* moderate, perhaps somewhat more than natural. *Sound* perhaps not any thing more than natural, in degree, but there is every now and then to be heard a *silvery* sound, somewhat like the tone of a very faint bell; but there is no thrilling or vibratory sound or sensation to be discovered. Palpitation having been excited, the impulse was found to be considerably increased; but even then, both the shock and sound were confined to the very region of the heart, being imperceptible along the upper half of the sternum, and hardly observable under the left clavicle.

Respiration very audible over all the left side anteriorly, except in the cardiac region; highly *puerile* under both clavicles; *very indistinct* over the lower half

of the right side, yet still distinguishable, and more so posteriorly; distinctly audible over all the back on both sides, but weak in the lower half, and very strong (puerile) over all the superior part. There is no *rattle*. [The patient examined in a sitting posture.]

The second examination was made on the 21st January, 1823, about a week after a severe attack of dyspnœa and pain in the lower part of the left side, and which had been greatly relieved by the loss of blood from the arm. At this time there was frequent cough, either dry or with peripneumonic sputa. He was able to lie in a semi-recumbent posture, which had not been the case for some days. He retained this position during the application of the stethoscope. The pulse was irregular, small and sharpish.

The following is the note of the exploration, inserted at the time in my pocket-book:—

Respiration puerile on the superior part of the left side anteriorly, and accompanied by a very loud sonorous rattle, evidently dependant on the presence of mucus, as it is always lessened in any particular point, and often removed, by coughing and the act of expectoration. The sound of respiration on this side becomes gradually weaker in descending, and at length becomes very indistinct about an inch below the nipple, over all the inferior part of the chest anteriorly; laterally, and on the back, the line of indistinctness rises higher, insomuch that the sound of respiration is very insignificant over the whole of the lower parts of the back. Over a space of about two inches broad along the spine it is more distinct, and becomes much more so on the superior parts of the chest; still it is not puerile as on the anterior parts. On the right side the respiration is nowhere puerile, although I think it can be distinguished every where, except on the inferior parts. There is no rattle observable on this side.

Impulse of the heart is perhaps somewhat greater than natural in the region of the heart, but the range of sound is not extensive, being inaudible over all the back, and only slightly audible on the right side anteriorly.

[The character of the sound in the cardiac region, and the rythm of the heart is not noticed.]

I did not apply the instrument again to this patient, although he lingered on till June.

After the first exploration on the 27th of August, I recorded the following *Diagnosis* in my Journal: *Disease of the Heart: Not Hypertrophiu—nor Dilatation—nor Valvular Disease? probably Hydropericardium, and perhaps chronic disease [meaning Pleurisy] with water effused in the inferior parts of the Pleura?* This note I took with me to the examination of the body after death, with the addition of the word, "*Peripneumony.*" And although this certainly contained the best opinion I could form in anticipation of the morbid changes which were to be found on dissection, I well remember expressing my uncertainty respecting its correctness, which was indeed denoted by the marks of interrogation. The result of the examination, has certainly proved my expectations, feeble as they were—to be much more groundless than I had anticipated.

DISSECTION. On removing the sternum, the Pericardium seemed distended, partly, as appeared to us, from air; but this was not certainly ascertained in the hurry of examination. There was a little more than the usual quantity of serum in the pericardium, but short of what could be called positive disease. The membrane bore no marks of inflammation. The heart was somewhat larger than natural, but probably not one-third. The parietes of the ventricles did not differ much from the natural thickness, but perhaps those of the left side were somewhat thinner than

usual: both were flabby. All the valves and natural openings on the right side were of the natural character; the auricle distended by a large polypus. The left auricle was also greatly distended by coagulated blood, and probably larger than natural, being at least as large as the right, if not larger. The degree of thickness of its parietes was not particularly remarked. The mitral valve was completely altered both in form and structure; the different points of which it is composed being all coherent and of a fibrous or semi-cartilaginous texture. The auriculo-ventricular orifice was, in consequence, greatly contracted. It was perfectly round, with a smooth thick lip, and admitted with difficulty the point of the fore finger. The aortal valves were sound.

The right lung was universally adherent to the parietes of that side of the chest; in its structure it was more solid than natural, but not hepätized, and contained a great deal of serous fluid. The left lung was no-where attached by disease to the neighbouring parts; it was quite sound in its texture internally, except that it, also, contained a morbid proportion of serum. The pleura on this side contained about half a pint of serum.

The liver was sound, but very small, not extending further towards the left side than the ensiform cartilage. All the other viscera were sound, except that the peritoneal coat of the stomach (which was much distended) was separated from the subjacent tunic, in many points, by interposed air.

REMARKS.

The remarks to be made on the diagnosis of this case naturally come under two heads, viz. (1.) such as relate to the disease of the heart, and (2.) such as belong to the lungs, or respiration.

1. It will be seen by the history of this case that I completely failed in my attempts to ascertain the precise nature of the organic lesion of the heart, before death. My failure is a matter of very little consequence in itself, but becomes, I conceive, of the greatest consequence if it compromises, even in a single well-marked instance of organic disease (as this was), the accuracy and power of the stethoscope. The questions to be investigated here, then, are:—whether my explorations were of a kind to justify any conclusions being drawn from them; and (if they were) whether or not the diagnosis formed before death was such as was warranted by the results of these?

It must be at once admitted by all who are acquainted with the treatise of M. Laennec, or who themselves have made use of his instrument, that, generally speaking, *two* examinations (as in the present case) afford only very scanty materials on which to build a diagnosis. Yet on the other hand, as the principal organic lesion in this case was, in all probability, of long standing, necessarily fixed in its character, and, no doubt, existing at each examination, in nearly the same state as found after death,—it may be urged, that even a single exploration ought to have shown the same results,—and ought to have been as much depended on, as many explorations. Admitting the full force of this argument, it still remains to be inquired whether or not the explorations made were sufficiently accurate and minute to warrant the establishment of a true diagnosis, and (if so) whether the one formed, was that which the premises authorised? On both these points I am willing to confess, on reperusing my report of the examination, that I entertain great doubts. The second examination, certainly, was very obviously insufficient and imperfect.

The Dilatation of the heart existing in this case, was

so slight, that I look upon its non-anticipation in my Diagnosis (whether the fault of the instrument or the explorer), as a very venial and unimportant mistake.

In respect of the diagnosis of the other organic lesion, however,—the contraction of the mitral orifice, I know not if the defence of the stethoscope can be made so satisfactory. Perhaps the best defence that can be made both for the instrument and the operator, is the fact stated by M. Laennec, that, at the time of publishing his treatise, he had not verified his diagnosis of this particular lesion by examination after death, on a single case (vol. 2. p. 315); and had in fact, met with only a few which he considered as examples of it. His diagnostic signs, therefore, being here without the seal of organic demonstration, cannot be received with the same degree of confidence, as if they had received that sanction. In this case certainly there was none of that *rasping sound* during the contraction of the auricles, which he considers pathognomonic of this species of lesion (vol. 2. p. 316.); and which was so remarkable in the striking case of Ponsard, detailed by him in p. 323 (case 45); neither was that peculiar vibratory sensation considered by Corvisart as characteristic of this affection, and named by him “*bruissement particulier*” (p. 220), and by Laennec “*fremissement cataire*,” from its analogy to the *sound* of the purring of a cat,—at all observable in this case. The absence of this, which I have often felt, is particularly noticed in my first report.

2. The second point of the Diagnosis of this case to be examined, is that relating to the state of the respiration, as indicating the condition of the lungs and pleura. The morbid conditions of these parts found after death were—a slight œdematous state of both lungs, universal adhesion and slight induration of the right lung, and a small quantity of serum in the left pleura. The results of the two exami-

nations by the stethoscope, above recorded, agree very well with, if they were not sufficient to point out during life, these morbid conditions of the parts concerned in respiration. There is little doubt that, at an anterior period of this disease, there existed a much greater effusion of water into the chest, than was discovered after death, especially on the left side, and which had been removed by the digitalis, repeatedly exhibited for this very purpose. At the period of the last examination, this was clearly indicated by the absence of respiration over the lower parts of the left chest. The presence of some cause partially obstructing the full inhalation of air, in some part of the lungs, was pointed out by the very strongly-marked *puerile* respiration always discovered at the top of the chest; and its existence on the left side was indicated, as well by the greater intensity of the puerile state on the upper part of that side, as by the total want of respiration on the inferior parts. It is also probable that the anasarcaous state of the lungs themselves, discovered on dissection, would tend to diminish the sound of respiration in the lower parts, while the patient was in the erect or sitting posture, owing to the gravitation downwards of the serum. The lesser intensity of the respiration over the right side, was well accounted for by the state of the pleura and lung on that side, found after death. At what period the inflammation, of which that state was a consequence, had existed, I am unable to say; but think that the adhesion of the pleura must have taken place anterior to the time of this man's coming under my care. Whether the partially indurated state of the lung of this side was of more recent date, I cannot pretend to judge. Was an obscure degree of chronic inflammation of this lung the permanent cause of the uniformly buffy state of the blood? If not, what was the cause of this?

As well from the symptoms during life, as from the

flabby and relaxed state of the pericardium found after death, I am disposed to believe that, at some period of the disease, there had existed a considerable accumulation of fluid in this cavity, and which had probably been carried off at the same time as the hydrothorax.

CASE VII.

Hypertrophia of the right Ventricle,—Hypertrophia with Dilatation of the left.—Ossification of the Sigmoid Valves,—Dilatation of the arch of the Aorta.—Pleuritis and Peripneumony of the left side.

Chichester Dispensary, March 14th, 1823. Jacob Webb, ætat. 40, a carter. This man was seen by me for the first time, on the 18th ult. but in a very cursory way. The only note I then made of the case expresses my conviction of there being organic disease of the heart, and records the state of the pulse merely in the following terms—"monstrously strong pulse." On the 22nd I examined this man more particularly, and made the following memorandum of the examination in my journal, but I find that I have entirely omitted to notice the history or present state of the patient's symptoms.

STETHOSCOPE. Pulsation of the carotids most distinct and strong, and conveying a well-marked thrill to the finger, and a very loud grating sound by the stethoscope, *Impulse* of the heart very great in the cardiac region; *sound* very low, and hardly at all possessing the natural alternations indicating the successive contractions of the auricles and ventricles, but rather a *continuous murmur*, interrupted, occasionally, by a louder and harsher sound,—but still very low. Under the right clavicle, and about the top of the sternum, the sound of the contraction of the ventricles is more distinct, and the grating sound as the contraction terminates, is very distinct,—indeed very loud, and

perhaps louder at the scapular extremity of the clavicle than at the sternal. Sound quite as loud under the sternum as immediately in the region of the heart.

DIAGNOSIS. *Hypertrophia of the ventricles, with moderate dilatation, and contraction or at least degeneration, of some of the valvular orifices.* PROGNOSIS. *Death within half a year.*

On this occasion the patient was bled, as he had repeatedly been before, with immediate, but very temporary, relief. He was recommended to remain quiet; but this recommendation was not attended to, as he persisted in returning to his work, as he had done before.

Oct. 10. Has continued in the same state, going to his work, as a carter, several days every week. He has a constant sense of weight and oppression in the region of the heart; and this sense of oppression and obstruction is every now and then (as often as once in two or three days) suddenly aggravated to a most violent and overpowering degree, causing him instantly to stand still, and being accompanied with great dyspnœa, and aching in all his limbs. Can only lie with his head high, and most easily on his back. There is now slight anasarca of the legs, and the whole body is leucophlegmatic. He has remarked an alternation of intensity between the œdema and his habitual dyspnœa, the one being most severe when the other is slightest. During the last month he has also made very little water, which is high coloured; and he has observed the same alternation between the quantity of this secretion and the oppression of the chest, the latter being most severe when the former was scanty, and vice versa. He has been bled, through the whole summer, generally at his own urgent request, as often as once or twice a week, always as frequently as once a fortnight. He has not now been bled for a month.

Having gone to the country for a fortnight, where he was quite *idle*, he felt himself so much better as not only not to require bleeding, but to continue at work for a whole fortnight afterwards. This last labour, however, has now completely laid him up. [Repet. V. S.—Digitalis Infus. Aperients.]

Nov. 14. Has been getting daily worse. Anascarca much increased, and he can hardly lie down at all in bed. Stethoscope again very cursorily applied. The contraction of the auricle can hardly be distinguished from that of the ventricles:—sound most audible on the sternal side of the cardiac region, and under the sternum. Sound (loud and croaking) very distinct over all the *right* side, especially under the clavicle, and greatest during the contraction of the ventricles;—loud also, under the *left* clavicle, but less so; very loud *above* the clavicles over the carotids, which are seen pulsating over all the neck. *Respiration* hardly explored, but seems puerile on the left back. Sits up almost constantly, from inability to lie down.

Three days after the above examination, this man was suddenly, and without any previous warning, attacked with complete Hemiplegia of the right side, and loss of voice; and he continued in the same state, soporose and torpid, yet sensible, until the 11th of December, when he died. During this period I applied the stethoscope several times; but owing to the very irregular and anomalous action of the heart, dependant on the recent morbid condition of the nervous system, I thought that little dependance could be placed upon the results of my explorations of the circulation; I shall not, on this account, notice these here. As the respiration, however, continued regular and uninfluenced by the disease of the brain, I shall transcribe my memoranda relative to the exploration of it. Owing to the immobility

of the subject, only the anterior and lateral parts of the chest could be examined.

Left Side. Respiration loud, perhaps puerile, under the clavicle, distinct over the upper parts as low as the nipple, but not perceptible, in the slightest degree, one line below it, or on any of the inferior parts of this side, as far as can be explored as he lies on his back.

Right Side. Respiration very distinct over all the lower and lateral (axillary) parts, to within a narrow hand's-breadth of the inferior edge of the ribs.* much louder than on the left side (except immediately under the clavicle); it is distinct at least a hand's-breadth lower on this side than the left. Respiration much less audible *above* the nipple on this side than on the left: indeed it is not audible there except by means of a loud sibilous rattle; it is also indistinct along the right side of the sternum.

20th. Respiration not audible, except by the rattle, under the right clavicle, puerile under the left.

22nd. I now learn from this man's wife that it is full eight years since he became affected with some degree of his present complaints, viz. occasional shortness of breath and slight uneasiness of the chest. The disease appeared to be gradually but slowly gaining ground, until nearly a year since, when he had the misfortune to be run over by a waggon, the wheel passing over the chest. This accident confined him for some weeks, and from this time it would appear that his complaints increased, with a more rapid pace, up to the period of his admission to the Dispensary. His wife, of her own accord, mentioned aggravation of his habitual distress in the chest, as an almost invariable consequence of taking food or drink, in any considerable quan-

* Site of the liver, as shown after death,

tity. She likewise describes his sleep to have been, upon the whole, pretty sound, occasionally disturbed by dreams, but not broken by sudden startings.

Respiration very puerile under the left clavicle;—audible immediately under the right, only by means of a sibilous rattle,—but loud over the middle parts of this side, especially about the nipple. Pulse 84, full and strong. This poor man continued exactly in the same state, torpid and speechless, yet sensible and without any convulsions, unrelieved by bleeding, or any other means adopted, and with increase of dyspnœa only a few day before his death, which took place, as already said, on the 11th December.

The body was examined on the following day by Mr. W. Guy, Messrs. Tully and Atkinson, and myself. The following is the note of the *Diagnosis*, which I took with me to the examination :

“ WEBB. *Hypertrophia—with Dilatation of (one or both?) the Ventricles—Contraction of an orifice, or degeneration of the valves (mitral or sigmoid) of the left side. Dilatation of the Arch of the Aorta? Hydrothorax of the left side? Hydropericardium?*”

“ *Query.* Does the enlarged heart or pericardium extend to the *right* side of the sternum, or even compress the lung under the right clavicle? Or was the absence of the healthy respiration in these places, merely owing to the temporary obstruction of some of the bronchial tubes by the mucus with which the lungs were evidently charged during the late explorations?”

DISSECTION. Exterior. Legs considerably anasarous, the rest of the body slightly so ; lips purple.

Percussion on the chest, as the body lay supine, elicited a clear sound from the right side, and also outside and below the nipple on the left, but a very dull one under the sternum, and in the cardiac region.

On turning back the sternum and attached costal cartilages, the edge of the right lung, loose and of healthy appearance, lay as far forward as the mediastinum, and descended as low as the 5th or 6th rib. The left lung was not at all visible, and the cavity of the pleura on this side was closed from our view by a band of adventitious membrane, which extended in a longitudinal direction from the first rib to the the diaphragm, and united the pericardium to the ribs in the line of the origin of their cartilages. The pericardium, inclosing a vastly enlarged heart, was seen occupying the whole exposed space, with the exception of the edge of the lung, already mentioned, which overlapped its right side.

The right lung was perfectly sound throughout, and adhering only in one point of the upper lobe. The pleura of this side was also without any marks of inflammation, and contained only a very small quantity of serous fluid. The left cavity of the chest contained a large quantity of a turbid serum intermixed with many floating flakes of lymph. The whole pleura, both costal, pericardiac and pulmonary, on this side, as high as the 2nd rib, was coated, more or less thickly, with the same flaky false membrane, and appeared very red and vascular beneath. In some places, especially on the left side of the pericardium, the effused lymph had a lobulated appearance, and was in some points half an inch thick. There was no mark of antient or organised bands of adhesion. The whole of this lung, except the upper lobe, was compressed towards the spine, by the fluid which floated above it (as the body lay supine), yet on examination this still remained of a considerable size. The upper lobe was nearly sound, every where crepitous, yet somewhat firmer than usual, over its anterior two-thirds; and partially hepatised over the posterior third. This lobe adhered by a small point of its surface to the clavicle. The lower lobe was

completely hepatized, and when cut gave out much of a purulent sanies. As is usual, in this state of parts, all trace of the natural vesicular structure had disappeared, and the viscus was friable like a soft pear. The hepatized portions were adhering only very slightly to the costal pleura.

On laying open the pericardium (which contained only a natural quantity of serum) and examining the heart in situ, this appeared to be between two and three times as large as the natural size. As it lay across the chest, the apex extended to about the middle of the sixth rib of the left side, and appeared to be separated from the *spleen* by the mere plane of the diaphragm; while the right auricle (not much distended with blood) reached, in the line of the third rib on the right side, as far outwards as one inch beyond the origin of the cartilage of that rib. The heart was not greatly altered from its natural shape, somewhat more rounded, but the apex not very obtuse. Its colour, as was that of the whole pericardium, was natural, and bore no marks of inflammation, unless two flaky spots on the left ventricle be considered as such. The heart felt remarkably solid and heavy. The cavity of the right ventricle was very small, as small perhaps as the proportion natural to such a subject, extremely small when compared with the vast size of the whole heart in its diseased state. The parietes were very solid and of natural colour, and much thickened, being from $\frac{1}{4}$ to $\frac{1}{2}$ an inch thick at the thickest parts, exclusive of the columnæ carneæ, which were extremely solid, large and numerous,—inso-much as almost to fill up the whole cavity of the ventricle, except just at the base, and origin of the pulmonary artery. The tricuspid and sigmoid valves were quite natural. The right auricle of moderate size, and decidedly more fleshy than natural. Its columnæ, also, were very numerous and strongly marked, and its whole texture firmer and

stronger than usual. The cavity of the left ventricle was three if not four times as large as that of the right, and would have contained a small orange. Its columnæ were sufficiently numerous, but were more like those of the auricles, very small, compressed, and as it were lost in the substance of the parietes, so as to leave the cavity like a hollow cup. The four pillars of the mitral valve, however, were very large, prominent, and strong, and formed a remarkable contrast with the other columnæ.

The parietes of this ventricle were from $\frac{3}{4}$ of an inch to an inch thick at the base, and a quarter of an inch at the apex; the texture firm and solid, yet yielding to strong pressure between the thumb and finger; colour red. The mitral valve quite sound. The auricle of moderate size. The aortal orifice of the natural size, but the sigmoid valves were rough with many minute points of ossification, apparently, however, not sufficient materially to affect their action. The aorta was considerably dilated, immediately above the valves and as high as the arch, and, as it lay in situ, bulged into the intercostal space of the first and second ribs on the right side, as far as an inch to the right of the central line of the sternum. The inner membrane of the aorta was quite rough with osseo-cartilaginous points, especially just above the valves. The pulmonary and coronary arteries quite sound.

The left auricle, left ventricle and aorta were filled with very black blood. The liver, stomach, and spleen, of natural appearance. On looking at the abdominal surface of the diaphragm while the heart lay in its natural situation, a large prominence was observable under the xiphoid, and to the left of it, produced by the enlarged heart.

REMARKS.

As in most of the other cases recorded in this volume, the exploration by the stethoscope in this, was imperfect

In consequence of this deficiency (and I believe of this alone) the Diagnosis formed was in some respects erroneous, and in others doubtful. Upon the whole, however, I think a comparison of the examinations during life, with the appearances on dissection, will tend strongly to confirm the value of the auscultatory diagnostics.

I committed a great error in not repeating and extending my explorations in the first stage; as, in the latter stage, although I sought to remedy this error, I was in a great measure frustrated, as far at least as the heart was concerned, partly by the inconveniences and difficulties thrown in my way, from the torpid and immoveable condition of the patient after the invasion of the paralysis; but principally from the morbid action of the heart resulting from this state of paralysis.

In my report of the first examination on the 22nd of March, many essential particulars are omitted. I take no notice of the perception or non-perception of the sound of the heart on the back, or any part of the left side except the cardiac region; I fail to state the precise extent, and also the degree, of the impulse in the parts where it was perceptible; and I altogether omit the state of respiration, and the results afforded by *percussion*.

Notwithstanding these omissions, there existed sufficient grounds for fixing the Diagnosis then recorded, and which the examination after death substantially confirmed. I now, indeed, think, that the results of that exploration, clearly justified a more correct and precise diagnosis,—viz. *Hypertrophia of one Ventricle (the right) with Dilatation of the other.*

In vol. II. p. 226, and 282, Laennec says that when the sound of the heart's contraction is louder under the clavicles and in the axilla, than in the region of the heart, the sign may be considered as pathognomonic of dilatation,

provided the patient has not tuberculous excavations in these places. In the same volume, p. 261 (note), he says that in cases where the sound is heard remote from the cardiac region, it is generally derived from *both* sides of the heart (if they are both sonorous), and not from any one only. It would result from this, that, in the case before us, while the right ventricle would give a strong impulse in the cardiac region, especially on the right side, the left ventricle would produce a sound sufficient to be diffused over the chest, and consequently on the right side as well as the left.

The exploration of the respiration in this case, compared with the appearances on dissection, affords a striking instance of the fidelity of the stethoscope; although the explorer did not, in some respects, deduce the conclusions from it which he might have done. This will be seen from the *queries* attached to my note of diagnosis read previously to the dissection.

APPENDIX TO CASE VII.

I have said above that in drawing my conclusions respecting the morbid state of the heart, from the indications of the stethoscopic explorations, I entirely neglected those made after the supervention of the paralysis. I did this because I found the actions of the heart, after that event, extremely variable, uncertain, and anomalous,—a state which I conceived to depend not so much on the organic lesions of the viscera in the chest, as on the irregular distribution of the nervous influence. I founded this opinion partly on the general difference of the results obtained compared with those of the early explorations, but principally on the remarkable variation now observed between almost every two subsequent examinations. In short, it was evident that the muscular actions of the heart were constantly vacillating between palpitation and torpor. For many reasons, however, I think it necessary to notice these results in this place,

under their ordinary divisions. It is proper to premise that during all the examinations the patient lay flat on his back ; and that the pulse was always very irregular as to rythm, but regular as to force and frequency,—being full and strong, and always under 90.

1. *Impulse.* This was very variable, but, generally speaking, *very slight* ; sometimes, after ceasing to be at all felt for some space, one or two smart shocks would be perceived ; or one very powerful contraction would be followed by several feeble ones.

2. *Sound.* This also varied much in degree,—being sometimes natural, sometimes less, and sometimes greater than natural ; in general, in the immediate region of the heart, it seemed to have its seat deep in the chest, and rather resembled a faint hollow remote reverberation, than the sound produced by a rasp or saw. In every examination, it was much louder under both clavicles (especially the *right*) than in the cardiac region.

3. *Rythm.* This also varied much, as to the regularity of succession of the different contractions. In one respect, however, there was little variety—viz, as to the relative time occupied by the contraction of the auricles and ventricles. In general, the sound produced by the contractions of the heart was rather like that of a continuous hollow tone, than *alternations of different sounds and an interval of silence*, as in the natural state of the organ. Occasionally, with care, the contraction of the auricles could be perceived ; but their contraction was very indistinct, and extremely brief when compared with that of the ventricles,—the latter appearing to begin to contract anew as soon as the former contraction terminated.

Remarks. In studying the foregoing results, according to the principles of Laennec, it will be allowed that they accord admirably with these, and with the morbid anatomy of

the case, in every respect, except that of *Impulse*. The peculiar character of the *sound* and *rythm* clearly indicated dilatation of some one of the ventricles. Much doubt, however, was excited in my mind, respecting the existence of *hypertrophie* (formerly recognised), by the want of *Impulse* in the cardiac region. This anomaly, as I have already said, was perhaps sufficiently explained by the paralysis. Perhaps, however, it might be owing to very different causes. At all events, I think it necessary to notice the circumstance in this place; as well for my own sake, as that of the reader; since I am willing to confess, that in drawing up these papers, I wish rather to be considered as a student than a teacher; and hope, at least, to derive as much instruction from them as any of my readers. The causes alluded to, as capable of modifying the usual manifestations of the heart's action, are the pleuritic effusion and hepatization of the lung existing on the left side.

As I omitted to explore the respiration at my first examination in March, I cannot positively assert that, at that time, there was no effusion into the chest, and compression or induration of the left lung; but I think it extremely probable, from the symptoms, that there was not. I think, however, there can be no doubt whatever that such an effusion and induration did exist at the time of my subsequent examinations in October and November. The supervention of this state subsequently to the first examination and previously to the last, will, perhaps, explain the discrepancy between the results of these two examinations, in respect of the sign of *Impulse*. See Laennec vol. II. p. 254, 278. In the former place he says—“another source of mistake in the diagnosis of diseases of the heart, arises from the coexistence of other diseases of the chest, especially such as diminish the sphere of respiration, for instance, peripneumony, emphysema in a high degree, and, especially, chronic pleu-

ris. In such cases I have occasionally found on examination after death, great dilatation and hypertrophy, although, during life, the whole actions of the heart, in respect of impulse, sound and rythm, had been perfectly natural."

This admission certainly shows a degree of imperfection in auscultatory diagnosis; it is, however, satisfactory to know, that the difficulty has been stated, and the physician warned against it, by the original discoverer.

In conclusion, I would observe, that this case, while it illustrates the powers of the stethoscope, shows also the care and attention necessary in using it, and in deducing conclusions from it. Among many imperfections in my examination of this case, I must mention the great omission of *percussion*. The employment of this in experienced hands, for example, would have removed all doubt as to whether the absence of respiration under the right clavicle, was owing to the presense of a solid body compressing the lung, or merely to the obstruction of the bronchia by mucus.

CASE VIII.

Complete adhesion of the Pericardium to the Heart.—Ossification of the pillars of the mitral valve.—Chronic Peripneumony of the right lung.

Chichester Dispensary, April, 1823. William Steinicke, ætat, 40, an ex-soldier, and by birth a German, was admitted a patient of the Chichester Dispensary, under Dr. Conolly, in February, 1823, in the last stage of a disease of the chest, under which he had laboured, in a greater or less degree, for several years. I am unacquainted with the particular history of this man's case, further than that he had long had a most violent cough, and purulent expectoration. Twelve months before his death, I know that his cough was of such remarkable severity as to be heard, day and night, over all the neighbourhood in which he lived. I first visited him in March, at which time he had been confined to his

bed for several weeks, and had been, in a great measure, deprived of the power of deglutition, from the increase of an obstruction under which he had also long laboured. At the time I visited this man, he had much purulent expectoration, great cough, and pain across the chest, assuming occasionally a paroxysmal character of extreme severity, but of which I cannot venture to state the precise nature as I have no written notes of the case. Once only did I examine his chest (anteriorly) with the stethoscope, viz. on the 23rd March, 1823. At this time he lay in his usual position, flat on the back. The pulse was regular. The following is the note of the exploration :—*Action* of the heart regular ; *impulse* considerable in the region of the heart ; *sound* louder than natural in the same place and as low down as the angle of the short ribs, also towards the sternum ; most audible with the open stethoscope ; both the sound and *impulse* perceptible at the very extremity of the xiphoid ; *sound* perceptible over all the right side (anteriorly) but not very loud,—more so in the middle than under the clavicle ; about the nipple (right) and below it, there seems to be *impulse* as well as sound. *Respiration* audible over the greater part of the *left* side (anteriorly) ; attended, in the vicinity of the heart and under the clavicle, with a dry sonorous rattle, very loud ; *puerile* under the clavicle, and extremely puerile and without any rattle, under the sternal extremities of the 2nd and 3rd ribs ; very indistinct over all the right side, yet still in some degree perceptible in most places, and, where perceptible, accompanied by a slight crepitous rattle. Pectoriloquism not explored, except under the left clavicle, where it is wanting.

This examination was made three weeks before this man's death, which took place on the 15th April ; and upon looking over the above notice of it, on the evening preceding the examination of the body, I put down on a slip of

paper, the following DIAGNOSIS which I took with me, and read to the gentlemen who assisted me at the dissection, namely, Messrs. W. Guy, Tully and Philpot :—

“STEINICKE. *Dilatation with Hypertrophia (slight), especially of the right ventricle: heart otherwise natural? Left lung sound, especially in the superior lobe. Inflammation and consequent consolidation (in a considerable degree) of the greater part of the right lung. Larynx or Trachæa diseased, and affecting the œsophagus?*

DISSECTION. *Right Lung* firmly adhering in every point to the parietes of the cavity; its substance diseased throughout, being hard like liver, and partially tuberculous, and in the posterior part of the upper lobe, a vast hollow abscess capable of containing an orange. The *left lung* adhered partially to the pericardium and ribs anteriorly, and more firmly posteriorly, but the upper lobe was free from attachments on the whole of its anterior surface. This lung possessed the natural crepitous character in every part, but not equally so, as many points were considerably indurated, and the whole contained many unsoftened tubercles, and was much variegated by black points.

The *Heart* was of the natural size; the pericardium intimately united to it in every point, by a most firm and evidently old adhesion, and without any obvious intermediate tissue. The right ventricle and auricle were sound; the left were also sound in every respect except that three of the *columnæ carneæ* (of the ventricle) connected with the mitral valve, were completely ossified through their whole extent, with the exception of a minute portion at each extremity, which was semi-cartilaginous or fibrous, and flexible. This arrangement seemed absolutely necessary to admit the natural contraction of the ventricle.

A large tumour, consisting of a congeries of indurated glands, was found under the upper part of the sternum in

the posterior mediastinum, between the aorta and bifurcation of the trachæa, and compressing the œsophagus.

The liver was sound, but with its anterior edge extending several inches beyond the margin of the short ribs on the right side, and in the præcordia. The stomach was also healthy, but apparently displaced by the liver; it lay in a longitudinal direction, with the pyloric orifice as low as the umbilicus. The other viscera were natural.

REMARKS.

This case affords an example of the much greater difficulty attending a correct and minute diagnosis of diseases of the heart, than of the lungs. The state of the lungs was correctly ascertained before death, as far at least as the nature of the exploration, was calculated to discover this. Had pectoriloquism been sought for, there is every reason to believe that it would have been found over the top of the right scapula, and in the right axilla, and, probably, in a very striking degree.

The existence of dilatation with hypertrophia was anticipated from the perception of an impulse and sound greater than natural, in the region of the heart; and the enlargement was conceived to be principally of the right ventricle, from the perception of the sound over all the right side, and the existence of *impulse*, not only at the point of the xiphoid, but (which is much more uncommon) under the right nipple. This opinion was proved by the dissection to be completely erroneous; and yet the error was in this instance, I am disposed to believe, somewhat pardonable in the physician, and hardly injurious to the credit of the diagnostic means employed. In the first place, it is to be remarked, that Laennec has laid down no diagnosis of the close union of the pericardium to the heart; its existence, therefore, was not likely to be anticipated by a student, in any case; and while the signs indicative of it,

in the present instance, bore considerable resemblance to those indicative of a different and more common affection, it was, perhaps, only natural that the latter should be pitched upon as the source of the phenomena observed. Upon comparing *now*, however, the indications of the stethoscope with the appearances on dissection in this case, I am not sure whether a juster diagnosis might not have been formed. The induration of the whole of the right lung was ascertained by the nearly complete absence of the respiratory sound; and the knowledge of this fact ought to have been sufficient to account for the perception of the sound of the heart over all this side; since it is well known, and is directly stated by Laennec (vol. 2. p. 200,) that a hepatized lung transmits the sound of the heart much better than a healthy one. It ought also (I *now* think) to have occurred to me, that a heart so much enlarged as to be felt pulsating under the xiphoid and lower part of the *right* side, ought to have exhibited a *much greater* impulse, or a *much louder* sound (or both), in the region of the heart, than existed in this case. Might this extensiveness of the *sphere* of impulse, conjoined with moderation in its *degree* in the cardiac region, be considered as helping to characterise adhesion of the pericardium to the heart? It is obvious that in such a case as the present, where the lungs were adherent to the pericardium, the actions of the heart could not be accomplished without communicating an impulse to all the adjoining parts. It is, however, also worthy of notice in this place, that in Case ix. of pericarditis with copious effusion, the impulse of the heart was felt under the right axilla, at a time when the shock in the natural site was feeble.* With respect to the ossification found in the interior of the left

* The extended sphere of impulse in this case depends on quite a different cause. See Remarks on Case ix.

ventricle, I think this is a species of lesion that can hardly be expected to be ever discoverable by the stethoscope, or any other means, before death, inasmuch as it does not necessarily occasion any *peculiar* irregularity in the rythm of the heart's action, nor any peculiarity of sound, as long as it does not lessen the mitral orifice, which was not the case in the present instance. Another reason afforded by the stethoscope, in this case, for believing the heart not to be greatly enlarged, was the existence of the sound of respiration over the greater part of the left chest. Had the heart been greatly enlarged, this would not have been the case.

CASE IX.

Enlarged Heart.—Pericarditis.—Pleuritis.

December 9th, 1822. Mr. N——n, ætat. 40, almost all his life had been subject to constipation, heartburn, headach, and other symptoms of indigestion, but was, nevertheless, strong and hearty, until within the last two years. About the beginning of that period, he began to be affected with occasional fits of breathlessness and palpitation, especially on walking fast, and more particularly up hill, or up stairs. This last symptom has progressively increased to the present time, and has always been accompanied with a sense of fulness and oppression, in the region of the heart. Since the supervention of the complaint of the chest, he has, in a great measure, lost his headach and heartburn, but his bowels have become more costive, and he has been very much troubled with nausea and frequent retching. He has also become subject to very severe cough, occasionally,—for the most part dry, but latterly with mucous expectoration, at times slightly tinged with blood. He has no impediment to taking a deep inspiration, nor any pain whatever in the chest, except during the paroxysms of great dyspnœa accompanied (as they always are) by palpitation.

He has never had any fever or heat of skin. During the last two years he has several times been half-jaundiced (he says), his skin being yellow and his urine very high coloured,—but this state speedily passed off under the use of purgatives. Sometimes his urine has been extremely copious and colourless;* latterly it has been scanty, and is now high-coloured, with a very copious pink sediment. Having been very unfortunate in business, and being of a sensitive sanguine temperament, he has suffered great mental distress, and is now very low spirited. He admits, on being questioned, that the palpitations, and other uneasy feelings about the heart, seemed to be caused, in the first place, by his great anxiety and distress of mind. He has always observed, and up to the present moment, that even when most tranquil, the palpitations and attendant uneasiness are immediately excited by strong emotion.

On examination, there is found a swelling and very distinct hardness, in the præcordia, answering to the left lobe of the liver enlarged. This place is very impatient of pressure. There is no tenderness nor fulness in the right hypochondrium under the edge of the ribs. On *percussion*, the chest sounds well every where, except in the region of the heart, in which situation the sound is *very* dull, over a considerable space. There is however, no particular tenderness in this point, and the heart is not found pulsating perceptibly to the hand—[not examined by the stethoscope]. He was bled two days since to 16 oz. and found *great* and *immediate* relief. The blood drawn is not at all buffy or cupped. He can lie better on the back than on either side, but does not keep his head higher than usual. The pulse is upwards of 100, small and regular. He is not subject to perspirations, and never feels his hands and feet

* No doubt during the fits of palpitation.

parched. The tongue is pretty clean, and he says it has always been so. The stools have been recently very dark. The appetite had been always very good till within the last year, during which period it has been very variable. The sickness and retching are very distressing, and evidently not caused by any thing *in* the stomach as nothing is ever ejected.

[Subjoined to the above report, in my case-book are the following remarks on the Diagnosis, &c. which I have subjoined, chiefly from the principle on which I proceed in detailing these cases, of adding or detracting nothing from the original documents.]

“ *Diagnosis? Ratio Symptomatum?*—Long continued dyspepsia and biliary disorder, terminating in, and partly superseded by, chronic enlargement of the liver, and diseased heart (*Dilatation? Hypertrophia? or both?*), the latter affection determined by the predisposing influence of mental emotion. The paroxysms of dyspnoea are owing to the disease of the heart, as is also the disease of the lungs, whatever this may be; the sickness and retching most probably owing to the pressure of the diseased liver. The indications of treatment here seem to be: 1. to improve the digestive and biliary systems; 2. to remove the enlargement of the liver; 3. to lessen, if not remove, the disorder of the heart. (Here a question arises—is the disease of the heart *organic* or *sympathetic*?—to be determined by the *Stethoscope*. *Treatment*: 1. Gentle continued tonic aperients, and alteratives (*Pil. Hydr*;—*Infus*: *Senn*: *c*, *Aurant.* &c.); 2. Topical bleeding from the præcordia, blistering, mercurial frictions, &c.; 3. Rest, regimen, local bleeding in the region of the heart, also general bleeding for temporary relief.”

The treatment, on the above principles, having been instituted, he felt almost immediate relief from the retching and sickness; and all the symptoms were greatly relieved,

after a few weeks. A few days after the first examination, detailed above, I applied the stethoscope to the chest: the following are the results:—

Respiration. The sound of this is quite wanting on the *left side* from below the 3rd or 4th rib, to the bottom of the thorax, over a space bounded by the rib above mentioned, the sternum on the right, and a line drawn about an inch outside the nipple on the left; or, to speak roundly, over a space of the extent of a large hand spread open, of which the ordinary site of the heart is the centre; very distinct, approaching to puerile, over the remainder of this side, and unattended by any kind of rattle. Over all the *right side*, the respiration is very distinct, except where the liver incroaches upon the chest; and it would seem that this viscus reached somewhat higher than usual (but this is not certain). Over all the back, on both sides, the respiration is very distinct and perfect.

The heart. Sound of the heart's contractions very loud over all the space in which there is no respiration; very distinct also, but not very loud, over all the rest of the left side, especially without the stopper of the instrument, and, both with and without the stopper, quite as perceptible over all the sternum as in the proper region of the heart. On the right side of the chest, anteriorly, as far as the line of the axilla,* the sound is perceptible *without* the stopper, but not *with*—except within the line of the nipple;† where, and especially within an inch or two of the sternum, it is more distinct with the stopper than without it. On the left back the sound is very indistinctly perceived; it is still more indistinct on the right, but is nevertheless per-

* *i. e.* An imaginary line drawn from the centre of the axilla downwards, parallel with the sternum.

† Ditto from the nipple.

ceptible, with the open instrument, when great attention is paid. (Pulse 108, small and sharpish.)

On transcribing the above report (taken in the patient's chamber) into my case-book a few days after, I subjoined the following **DIAGNOSIS**:—In the above report, no account is given of the *impulse* of the heart, and this defect must render the Diagnosis imperfect. I think, however, the impulse was more than natural but not much, and this seems also to be inferred from the statement in the first examination, that the heart was not found pulsating by the hand applied to the usual place. Assuming, then, that the impulse is only moderate, I would give the Diagnosis, as far as the *chest* is concerned as follows: *Dilatation of the Heart very considerable, principally (probably) of the right ventricle, with moderate Hypertrophia. Lungs sound. No Hydrothorax as yet.* [N. B. I learn that several of this man's family have died of diseased liver and hydrothorax.]

January 7, 1823. The symptoms are worse,—more dyspnœa,—anasarca of the limbs: swelling of the legs considerable and with an inflammatory flush. Impulse of the heart considerable. Pulse 120, small. At this time the infusion of *Digitalis* was prescribed, with the view of relieving the dropical affection of the internal cavities, presumed from the symptoms to exist. He took half an ounce every sixth hour, which speedily brought on most plentiful diuresis, with diminution of the external swellings, and great relief of the dyspnœa and uneasy feelings of the chest. The benefit thus obtained was, however, only very temporary; and was shortly superseded by a new evil—viz. an extensive Erysipelas of the right leg, terminating in sphacelus. During the process of sphacelation, it was necessary to administer stimulants and enforce a regimen, which could not fail to be injurious to his original disease, although this certainly appeared for a considerable time relieved. The

sloughs separated in the most kindly manner, and the ulcerated surface, involving the greater part of the leg, continued to heal gradually, and was nearly cicatrized at the time of the patient's death. After a very brief respite, the pectoral symptoms returned in an aggravated degree, and continued, with various aspect and intensity, but with gradually progressive increase, to the fatal close. Up to the 8th of March, his state was, upon the whole, more tolerable; the paroxysms of severe dyspnœa being less frequent, the oppression in the region of the heart less, and his nights more composed. In particular, the appetite remained excellent, and much food, and *a good deal of wine*, were taken. The next formal report in my case-book is under the date March 7th—and is as follows:—Has been a good deal troubled with cough of late, and was so during last night. He at this moment complains only of dyspnœa and a slight degree of oppression on the chest. He lies pretty flat on his back. The pulse is 120, small and quite regular. The bowels have been rather relaxed during the last week, and he has been taking some astringent medicines. He has been in the habit of taking opium occasionally at night, ever since the sphacelation of his leg. I again applied the stethoscope to the anterior parts of the chest to day. *Impulse* of the *heart* in the cardiac region, and also under the sternum, greater than natural, and considerable: *Sound* proportioned to the impulse, loud in the above mentioned places, and also audible, in a *moderate* degree, over the greater part, if not the whole, of the anterior of the chest, on both sides. Great pulsation of the carotids. *Respiration* inaudible over a large space in the cardiac region; *puerile* over the superior parts of the left side: of moderate intensity over the middle and lower parts of the *right* side anteriorly, but not at all audible over the extent of a hand's-breath all along the under edge of the right clavicle, except

by means of a slight *piping* sound, at the termination of each expiration (sibilous rattle). As he lies on the back, the *impulse* of the heart, as well as the sound of its contractions is distinctly felt under the right axilla.

DIAGNOSIS: *Dilatation with Hypertrophia of the heart, especially of the right side: Hepatization of the superior lobe of the right lung.*

10th.—On the day succeeding the above report, viz. the 8th, his breathing became considerably worse, and he had a very severe fit of coughing, after which he was suddenly seized with a violent pain in the region of the heart, and over the left side, which has continued ever since. He now breathes extremely quick, and entirely by the diaphragm and abdominal muscles. His countenance has undergone a striking change.

15th.—The severe *stitch* of the left side has continued, more or less, at intervals, and there has been always present a considerable degree of pain, which is greatly aggravated by cough, and by any movement of the chest. Dyspnœa at times extreme. Tendency to diarrhœa. Pulse upwards of 120, and irregular. [Anodynes.]

17th.—No sleep but from opiates. Has lain for some time, and still continues to lie, in a half-erect posture, leaning to the right side, and breathing, in a great measure, since the last attack, without the aid of the intercostal muscles. There is now no perceptible action of the heart to the eye or the hand; but the *Stethoscope* detects a very moderate impulse and sound in the cardiac region, but not beyond. *Respiration* still puerile under the left clavicle, and not audible on this side below the nipple.

From this time to the period of his death, which did not take place till the 14th of April, he continued in a state of excessive suffering. There was constant dyspnœa, always great, but frequently aggravated in paroxysms to an extreme

degree, with dreadful anxiety, and a pulse too quick to be counted. Occasionally the pain in the cardiac region, and over the left side towards the Hypochondre, was very violent. There was also very severe cough at times, occasionally attended with copious thick yellowish puruloid sputa, but commonly only with the usual white mucus, and in small quantity. Except during the paroxysms of severe dyspnœa and smothered palpitation, the pulse was regular, though quick. He generally lay in a semi-recumbent posture, inclining rather towards the right side. The sleep was extremely bad, although he was generally oppressed with a great drowsiness. For a long time, he was seized immediately on dropping asleep, with a sort of half-convulsive and terrifying sense of oppression in the region of the heart; but neither now, nor at any time of the disease, was he in the habit of starting suddenly from sleep. During the three weeks preceding his death, the mind was always perfectly collected, when he was roused and chose to exert himself; but he easily and commonly fell into a state of half-sleeping hallucination, when left to himself, especially by night. Almost up to the very day of his death, the tongue remained clean and the appetite very good. The anasarca swellings had increased considerably some time before his death.

The body was examined 24 hours after death, by Mr. Wm. Guy, Mr. Tully, and myself. I took with me, as usual, a note of the morbid changes which I expected to find, and which I read to the two gentlemen abovementioned, before we proceeded to the examination. This note I here transcribe *verbatim*, from the original slip of paper now before me.

“ Mr. N——. *Chest.* Hypertrophia with dilatation of the heart, especially of the right side;—both in a moderate degree. Hydrops Pericardii? Pleuritic inflammation and serous effusion of the left side?

Abdomen. Ascites. Simple enlargement (that is without any very marked disease) of the *left* lobe of the liver, with much venous engorgement of the whole viscus."

DISSECTION. *Exterior.* Body slightly anasarious throughout. Face tumid; lips violet.

Abdomen. Intestines all of natural appearance. Omentum darkly injected with venous blood, but not diseased. Liver descending two or three inches below the ribs all round, the upper surface ascending as high as the fifth rib on the right side, but sloping downwards (or rather the diaphragm) towards the left side, so that it did not enter beneath the cartilaginous border of the short ribs of the left side more than an inch or two. The liver was of a dark mottled colour externally, somewhat rough, but not otherwise diseased. It was very large; the left lobe extending over the stomach to the spleen, but not adhering to it. There were not any unnatural adhesions of any other part of this to the adjoining viscera, nor any mark of inflammation externally or internally. Substance of the liver solid, and when washed from its blood, of a paler grey colour than usual; much gorged with black blood, which *flowed* from it copiously from every point when cut. The gall-bladder contained many gall-stones, and a moderate quantity of healthy-looking bile. Spleen, stomach, and all the other viscera perfectly sound.

Thorax. On removing the liver from the diaphragm, this muscle appeared prominent in the centre, immediately under and on either side (especially the left) of the xiphoid cartilage, and consequently convex towards the abdomen. On removing the sternum and cartilaginous ends of the ribs, in the usual manner, the lungs were not visible at all, the whole exposed space being occupied by the pericardium, prominent and distended with fluid,—the superior apex of it stretching as far upwards as the right clavicle (nearly).

On opening the sac it was found to contain upwards of a quart of a sero-purulent fluid, apparently of the consistence of milk, and of the colour of whey. This fluid was quite inodorous, and upon settling, separated into a transparent serum, and a fine powdery sediment. The whole internal surface of the pericardium (loose and attached) was covered with a layer of a white curd-like substance, resembling the sedimentous portion of the fluid, which gave it a rough, granular, *frosted* appearance, answering exactly to the description given by Corvisart, of the state of parts in Pericarditis. The description of this author was further verified in this case, by the numerous sacculated compartments, resembling the stomach of the calf, produced by the crossing of bands of the adventitious membrane, from side to side of the distended sac. On the left side of the heart, from the auricle to the apex, there was a mass of tremulous jelly, hanging in folds, half an inch thick in some places. Under the granular layer investing the pericardium, the natural membrane was very red, not uniformly but in patches, and evidently from the increased vascularity of inflammation. The heart adhered in no part to the pericardium, except by the gossamer bands already mentioned. It was in size more than one third, probably one-half, greater than natural. The right ventricle was pale in its substance, and covered exactly throughout, by what seemed to us a layer of fat (under the proper tunic), but which perhaps, was a peculiar degeneration of the muscular fibre (see Laennec). The substance of the heart was of natural texture and firmness throughout; the parietes of (at least) the natural degree of thickness everywhere, and those of the left ventricle more than double those of the right. All the valves and outlets were in a sound state. The *right Lung* adhered to the ribs in different points, especially the superior lobe, both before and behind,—much compressed and displaced by the

distended pericardium, but still every where crepitous. The *left*, on the lower parts, was compressed towards the spine, but the upper lobe was quite free and of the natural character. The compressed portions were red and fleshy, but not granular internally. The middle lobe, on this side, was closely attached to the ribs, so as to form a sort of septum between the superior and inferior halves of the cavity of the pleura.

In the inferior half, bounded by this lobe above, and by the diaphragm below, there was about a quart of sero-purulent fluid, exactly like that found in the pericardium; and the whole pleura investing this cavity, on the lungs, diaphragm, and ribs, was inflamed and coated with a layer of coagulated lymph. This fluid compressed the inferior lobe of the lung against the spine and mediastinum, as already mentioned.

REMARKS.

I think the results of my first exploration might have justified the conclusion at the time, of the existence of fluid in the pericardium. That the heart, or at least its including membrane was much enlarged, was evident from the large space wherein percussion and the stethoscope detected the presence of some body displacing the lungs. Had this enlargement been owing to an enlarged heart simply, with or without hypertrophia, the stethoscope would have disclosed a different character in the action of the heart. Had the heart been enlarged to this degree with hypertrophia, the great impulse of its action would have been exquisitely marked, not merely by the stethoscope, but by the general symptoms, and the sound would have been more extensively diffused over the chest; had simple dilatation been the disease, the *sound* at least, would have been vastly greater and more extensive than it was found to be. Reflection upon the general symptoms, also, ought to have confirmed, if not led to, the same conclusion respecting the

existence of pericardiac dropsy. The scanty urine, and the known course of diseases of the heart, rendered the presence of dropsy in some part of the chest extremely probable: but the natural extent of respiration, except in the cardiac region, precluded the supposition of hydrothorax, at least in any considerable degree: no other locality, therefore, remained for it but the pericardium, and its existence *there* was, moreover, rendered almost certain, by other and more direct signs.

It is, perhaps, impossible to form any very confident opinion as to the character of the effusion, presumed, for the above mentioned reasons, to exist, in the first period of the case—viz. in December and January; yet I think there are many reasons for believing that this was much more purely of a simply dropsical nature, than of such a kind as presented itself on examination after death. Some of these reasons are the following: 1. the moderation of the symptoms, comparatively with their subsequent severity when we know that the pericardiac inflammation certainly did exist; 2. the speedy relief of the dyspnœa, &c. from the use of the digitalis, which we can readily admit (and perhaps must admit) to be owing to the absorption of effused serum, but which absorption we can hardly believe practicable in a pericardium that was inflamed and coated with coagulated lymph; and this argument receives further support from the fact, that the subsequent use of digitalis at a time when there is every probability that pericarditis did exist, produced no similar relief of symptoms; 3. the probability that the pericarditis was of a subsequent date, derived from the analogous state of the left pleura found after death, and which state, it is almost certain, did not exist at the period in question. The true statement of the case, perhaps, may be, that the first effusion into the pericardium was the consequence of a very slight degree of inflammatory

irritation,—and that this morbid state eventually reached the degree of strongly-marked—though perhaps never acute—inflammation.

For the above reasons I am now of opinion that “Hydropericardium” ought to have been—and might have been—placed among the terms of the first Diagnosis. The treatment instituted shortly after, may be adduced as a proof of my entertaining such an opinion; yet I must fairly confess that I did not derive, at the time, that degree of conviction on this point, from the results of the stethoscopic exploration, that I now think they warranted and authorised.

In my exploration of March 7th, one circumstance is mentioned, which appears to be worthy of notice, as a diagnostic symptom of water in the pericardium, viz. the perception of the *impulse* or shock of the heart in the right axilla. Had this arisen from an enlarged heart simply, it ought to have been more constant, and also more extensively perceived; and besides, a heart so large as to be felt pulsating so remote from its natural site, would be productive of much louder and more extensive *sound* during its contraction. Corvisart gives, as one of the most trustworthy signs of pericardiac dropsy, this impulse of the heart discovered much beyond its natural sphere, and explains it very plausibly on the principle of the heart being, in such a case, loose and floating, as it were, and not bound down by its closely investing membrane, as in its healthy condition. I committed a decided error in my diagnosis at this time, in stating the superior lobe of the right lung to be hepatized on the single ground of respiration being *absent* over that part of the chest; when it is certain that the absence of respiration frequently arises from other causes, and depended, in the present instance, either on the temporary obstruction of some bronchial tube by the thick phlegm,

which the patient was at this time expectorating, or (which is still more probable) on the pressure produced by the enlarged pericardium. The repeated application of the instrument would have easily determined whether the absence of respiration was owing to the mucus or a more permanent cause; as, in the former case, it would have been removed by the evacuation of the phlegm. Percussion, also, would have led to the same result.

I think it appears pretty obvious from the detail of the general symptoms, that on the 8th of March the membranes of the pericardium and left pleura, both of which were previously, it is presumed, in a state of chronic phlogosis,—were attacked by a much more acute inflammation and consequent increase of effusion,—in short, by the morbid state discovered after death. This opinion receives strong confirmation from the brief report of the stethoscopic examination on the 17th, wherein it is stated that the impulse of the heart, which had been very considerable on the day before the attack, was now become very moderate, and the sound, formerly perceptible over the whole anterior of the chest, confined entirely to the cardiac region. The existence of the pleuritic effusion on the left side is, also, at this time proved by the total disappearance of respiration with the level of the nipple.

It will appear from what has been stated in the remarks on Case VII. page 131, that the diminution of the sound and impulse of the heart, at this time, may have been owing partly to the pleuritic effusion.

It will be remarked that the pulse, which had always been regular before, became irregular from the 8th of March; yet only at intervals.

The protuberance in the præcordia was caused, partly by the enlargement of the liver, but principally, perhaps, by the depression of it by the prominent diaphragm. The great

pain on pressure arose, it is presumed, almost entirely, from the communication of the pressure through the diaphragm to the pericardium and heart.

CASE X.

Hypertrophia with dilatation of the left ventricle, and Dilatation of the right.—
Pericarditis.—Hydrothorax.

Dec. 27th, 1823.—Miss H. P. *ætat.* 21. This young lady had always been rather delicate, being subject to coughs and colds; but previously to her 16th year, she was, nevertheless, considered as a lively, and active girl, fond of dancing and other exercises. From this time, however, she became much more delicate,—being unable to take much exercise, on account of the dyspnœa, pain in the back, and general fatigue, speedily induced by it. From this time, also, her extremities were generally cold; and her legs frequently, if not commonly œdematous,—and, at different times, to a very considerable degree. The catamenia, however, continued regular, and the urine of natural quantity. She was also extremely subject to severe bilious headaches.

Six weeks ago she was put under a course of steel, from being supposed to be merely debilitated, without any accompanying local mischief; and she certainly (by the testimony of her friends) appeared to improve in strength under its use. Within this fortnight, however, her complaints have been greatly aggravated, and are now very distressing. She is extremely short-breathed, and has a good deal of dry cough. The cough is immediately induced by attempting to draw a deep inspiration, but this attempt is productive of no pain in the chest, and, indeed, she complains of no pain whatever. There is almost constant palpitation of the heart; and when this is not present, it is immediately induced by the slightest attempt to move,—or by mental emotion: the impulse of the heart, during these fits

is felt by the hand, laid on the region of the heart, to be very great, and also very peculiar. It seems as if the heart were separated from the hand by a much thinner boundary than the parietes of the chest. The sensation produced was likened by an intelligent observer, to what would be communicated by the violent dashing of a half-filled bladder against the side; and he added, that, while feeling it, he could not divest himself of the idea that the heart must burst in the hand. The pulse is at present extremely quick (130-140) small and sharp; but there is no preternatural heat of skin, nor has there been at any period of the disease. There is a constant very obvious pulsation visible in the throat. The complexion is extremely pale, and the lips bluish.

Previously to the present attack, this young lady could lie—and did lie habitually—with the head low, and on either side indifferently. The dyspnœa and palpitation never arose spontaneously, nor unless when immediately excited by *motion* or *emotion*. She has never at any time experienced pain in the region of the heart. She is now and always has been, rather *relieved* by eating. During the few last nights she has not been able to lie down in bed. The legs are still anasarcaous, but less so than before the present attack. The urine is apparently natural, in kind and quantity. Owing to particular circumstances, the stethoscope could only be very imperfectly applied in this case: it was, however, applied twice, cursorily and momentarily. The only results obtained were the following: *Impulse* (in the absence of palpitation) variable, but considerable; *sound* very loud and clear in the cardiac region, and very distinct over the whole chest, before and behind; and without any morbid character. *Respiration* very puerile under both clavicles; not explored elsewhere except about the middle of the right side anteriorly, where it is of moderate intensity. [Hirud: reg. cord.—V.S. p. r. n. et pro vir.]

January.—Relief having been obtained from the first bleeding, and the blood drawn being extremely buffy and cupped, the operation was repeated several times, and the detraction of blood carried as far as could well be borne. Considerable relief of symptoms was thus obtained, but the source of irritation in the chest was far from being removed. The pulse continued quick, the breathing, although generally quiet, was occasionally aggravated to paroxysms of extreme dyspnœa, and there was, without any pain, extreme anxiety. The anasarca increased, and extended over the greater part of the body. For this state, and for the Hydrothorax, presumed to exist along with the inflammatory affection of the chest, digitalis and other diuretics were prescribed. But owing partly to the extreme dislike of the patient to medicine, and partly to the great irritability of the stomach, so little of any kind was taken, that it is needless to give any account of the remedies recommended.

Things continued nearly in the same state until death released this amiable and unfortunate lady from her sufferings, on the 25th February. During the six weeks preceding this event, the habitual state of the patient was not very distressing. She had no pain, the breath was not very short, there was little cough, and she could lie down on either side and with her head low, and sleep comfortably, occasionally. She was extremely pale and leucophlegmatic. There was no febrile heat, nor colliquative discharges. The most distressing of the habitual symptoms was a great delicacy of stomach (amounting very frequently to extreme irritability) and a vague yet great anxiety. Repeatedly, however, during this period, and especially during the last fortnight, paroxysms of dyspnœa threatening instant suffocation, with violent palpitation and terrible anxiety and oppression,—came on, and after lasting several hours, passed off, leaving the patient in comparative tranquillity and ease.

During the last ten or twelve days, the irritability of stomach was incessant, and her sufferings extreme.

DISSECTION. The body was examined thirty-six hours after death. The chest was found to be very narrow, and the sternum very short.

On removing the sternum and costal cartilages, only the distended pericardium, and the upper lobes of the lungs, were visible. The inferior lobes were compressed out of sight, towards the spine and upwards; but the upper lobes on both sides, were voluminous and perfectly sound. On the left side, the uncompressed lung did not appear to descend below the third rib; on the right, it descended as low as the 5th or 6th, being apparently retained so low by a small attachment to the ribs in that place. This small spot of unnatural union was evidently of old date, and was the only mark of structural disease observable in the lungs or pleura. The inferior parts of the chest were occupied, partly by a bloody serous fluid, and partly by the distended pericardium. There was about a pint and a half of serum in each side, without any admixture of lymph; and there was no sign of inflammation in any part of the pleura. As the unopened pericardium lay in situ, it appeared to be placed in the middle of the thorax, and to occupy the greater part of its inferior half. On the *left* side, it almost touched the parietes of the chest, laterally and posteriorly; it did not extend so far on the *right* side, but projected very much beyond the spine. It was red externally, but did not exhibit any formal marks of inflammation. On opening it, it was found to contain about a pint and a half of a bloody serum, like that found in the cavity of the pleura; and all its inner surface, as well loose as attached, was of a pale whitish colour, rough with minute points, and as if macerated,—resembling very much boiled tongue, only whiter. This appearance was occasioned by a

very thin coating of adventitious membrane, which could easily be rubbed off. The heart felt extremely soft and flabby, externally. It was very much enlarged; perhaps to three times its natural size,—certainly to more than double. On opening it, it was found that the whole organ was enlarged pretty equally as to the capacity of the cavities, but very differently as to the substance of the parietes; the walls of the *right* ventricle being very thin,—certainly considerably thinner than even in the natural size of the heart; while those of the *left* were thicker than natural, being, probably, about four times as thick as those of the right. The substance of the whole of the right ventricle was soft and flabby, but the auricle of the same side was proportionably much firmer, and had large pectinate muscles. The substance of the left ventricle was firm and solid, at least internally, and the pectinate muscles and fleshy columns very large; externally, it was comparatively soft. All the valves were sound, and the orifices of the natural size. The aorta and coronary arteries were also quite sound. The liver was very large but sound. It occupied the whole of the præcordia, descending very nearly to the umbilicus, and completely covering the stomach: there were no unnatural adhesions of it to the neighbouring parts. The stomach was small and contracted, but I am not sure that any thing observed in its structure could be considered as morbid. The spleen was sound. The small intestines of a very dark colour. Before the pericardium was laid open, it was found to cause the diaphragm to bulge out convexly into the abdomen,—the most prominent part being in immediate contact with the stomach.

REMARKS.

The application of the stethoscope in this case was so very imperfect and unsatisfactory, that it may almost seem misplaced in this collection. Its pathological interest, how-

ever, would make it worthy of being recorded, even if it bore no relation to the subject of auscultatory diagnosis. But this is by no means the case,—since it will be found, on examination, that even the brief and superficial exploration instituted, if not sufficient to establish a clear diagnosis, was, at least, sufficiently corroborative of the fidelity of the stethoscope as a diagnostic guide. From the correctness of the results obtained, I think it may be safely inferred, that a fuller exploration would have produced a proportionate extent of knowledge. I shall only at present make one or two brief comments on the coincidence of the signs furnished by the stethoscope, with the appearances on dissection. (The general history of the case suggests some important practical reflections, which I cannot now notice.)—The great enlargement of the heart was sufficiently indicated by the extension of the sound over every part of the chest : while the moderate degree of impulse coincided sufficiently well with the state of the ventricular parietes observed on dissection. The sounds of the heart's contractions were clear and of the natural character, in every respect except as to intensity; accordingly, it was found, that the orifices and valves (the degeneration of which is the chief source of foreign sounds) were in a perfectly natural state. The strongly-marked *puerile respiration* observed under the clavicles, clearly pointed out the existence of obstruction of a considerable portion of the lungs, from some cause or other. The appearances on dissection satisfactorily showed the nature and extent of this obstruction ; which I think, would have been easily discovered during life, by even a single complete examination of the chest, either by the stethoscope or percussion.

Judging from my own experience, I am disposed to consider this sign of *puerile respiration*, when existing only partially, as one of great value in practice. It is one that

is more readily and easily discovered than almost any other; and I think its indications are as much to be depended on. Its presence, in any one part of the chest, may, I think, be safely considered as pointing out the obstruction of a considerable portion of lung in some other part. To be sure, it affords no means of enabling us to judge of what nature, or in what place, this obstruction may be; but the certainty that obstruction exists, is often of great importance.

For instance: if in any particular case, while hesitating in our opinion whether a patient has water in the chest or not,—or copious pleuritic effusion or not,—or scirrhus of the lung or not,—&c., according as the common symptoms may lead us to infer in each case respectively:—if, on applying the stethoscope beneath the clavicle, we find, or do not find, *puerile respiration*, I think we are almost justified in making up our mind at once respecting the presence or absence of the morbid state in question. At least, I have no hesitation in giving it as my own opinion, that this sign is infinitely more to be depended on than any of the common symptoms usually trusted to in such cases. And, for once, the sign is as readily learnt as the symptom; since this particular application of the instrument is not more troublesome, to either the physician or patient, than feeling the pulse or examining the tongue, and scarcely requires more time. More than once, when for want of time or other reasons, I have been unable to explore the chest thoroughly, I have been enabled, from this sign alone, not merely to form a correcter Diagnosis, but to institute a more appropriate practice, than I could have done without its aid. More than one instance of this kind, especially in cases of symptomatic hydrothorax, is given in the present volume.

CASE XI.

(Supposed) Chronic Pericarditis.

Chichester Dispensary, August 23, 1822. Henrietta Bettesworth, ætat. 40, has always been bilious, i. e. subject to an irregular, generally constipated state of the bowels, sickness of stomach, bad appetite, &c. but not to such a degree as to interfere with her employment as a servant, until within the last half year. About six months since, she was attacked, for the first time, with a severe pain exactly in the region of the heart, for which she was bled, blistered, &c. at the time, without relief; on the contrary, the disease has continued rather to increase progressively to the present time. The part of the chest, beneath which the pain is seated, is now very tender externally, and intolerant of the slightest percussion. This pain is constantly present, and habitually felt as a gnawing, wearing, rather than an acute sensation; but it is greatly aggravated, even to a degree of much acuteness, by every thing that agitates the body or mind, or hurries the circulation. At these times of aggravated suffering, considerable palpitation and dyspnoea generally attend; although some causes, such as a full meal, encrease the pain without exciting palpitation. Of all species of exertion, the act of going up stairs, or up hill, affects her most. She says that her antient bilious affections, e. g. anorexia, constipation, bad taste, flatulence, &c. are rather increased since the supervention of this new disease. She can lie down only on the affected side, and with her head high. She sleeps very badly, being distressed by dreams, and hasty awakenings; and says that she is very nervous, and easily agitated and alarmed. The urine is said to be high coloured, and there is slight œdema of the right leg. The tongue is covered with a brown fur, and the lips are quite purple. The pulse is 96, pretty full and strong and regular. The stethoscope, momentarily applied, detects

the sound of the heart's action, very distinct, over all the right side; and the sound and impulse in the cardiac region are both considerable. [Qy. Hydropericardium from chronic pericarditis? Or slight dilatation of the heart—consequent to bilious disorder? Or only sympathetic affection of the heart from Broussais's *Gastro-enterite*?] V.S. ad oz. xvj.—Hirud. viij regioni cord.—Pil: Hydrarg. gr. v. o. n. et Magnes: Sulph: dr. ij. om. matutin.

30. Blood buffy. Feels her pain relieved, and she sleeps better; thinks she is weaker, and the dyspnœa is u. a. Bowels moved several times daily. Tongue still much furred, and there is a constant smacking of the lips as if they were parched. Pulse 100, pretty strong.

V. S. ad oz. xij.—Vesicator: cord. reg.—Repet. med.

Sept. 6.—Blood buffy. Feels better, but the dyspnœa continues. Pulse and tongue u. a. Repet. Pil. et Vesicat:—Infus: Digitalis dr. ij. 6tis horis.

13th.—Better, but pain and dyspnœa continue. Has made a little more water. Pulse 100, still strong.—Repet. V.S. et Infus: Digital. et sumat h. s. quotidie Pil. Hyd. Extr. Colocynth. c. et Ext: Hyoscyam. aa. gr. iss.

20th.—Blood buffy. Greatly relieved by V.S. for a time, but now u. a. Repet. med. et Vesicator.

27th.—The Digitalis has affected the system, and reduced the pulse to 80, but has not increased the flow of urine; but she feels better upon the whole.

Omitt. Digital. Repet. alia et vesicator.

Oct. 24.—Feels considerably better upon the whole; has less pain and palpitation, and is less nervous; but the pulse is again upwards of 100 and sharpish; the tongue is still dry and furred, and the urine continues scanty and high coloured.

It would be tedious, and perhaps useless, to transcribe weekly reports of this patient's case from my journal. I

shall therefore content myself with giving a general outline of it, except in such instances as either the symptoms or mode of investigation appear to deserve more particular notice. I should say, then, that the symptoms continued very similar for many months,—the pain and dyspnœa considerably mitigated, but both still experiencing, occasionally, very severe aggravations. The persistence of the inflammatory state was shown by the obstinacy of the above-mentioned symptoms, and by the relief constantly experienced from bloodletting and blisters, and almost from these only. From the date of last report up to the end of April, she was bled a vast number of times and blistered,—the blood being uniformly buffy. She took various medicines;—calomel and opium so as to affect the mouth; the *Digitalis* again;—all with little apparent benefit.

In the middle of November she was seized with a more severe and acute attack of pain and inflammation, for which very active treatment was used. I did not see her at this period, but the Dispenser who attended her inserted the following note in my journal—"Can only lie on the *left* side, with her legs drawn up; any attempt to lie on the right side or back, increases the distress of breathing." After this attack she had a little cough. The following is my report of her state on the 25th April, 1823:—Says she is much better upon the whole, and in all respects; yet upon questioning her particularly, there seems to be a continuation of all her former symptoms. She still suffers from palpitation, or rather from an incessant distressing feeling of the heart's action, and there is still much tenderness externally. She can lie with the head lower, but still elevated, and she does not sleep more than an hour at once. There is still considerable dyspnœa. The lips are still blue, and become (she says) quite black on taking exercise. Pulse 120, small and regular. Tongue still furred. Appetite better.

The same symptoms, with some variation both in kind and degree, continued, and the same treatment was followed, with occasional and considerable intervals of repose, to the month of November. During all this time the pulse was never under 100, and seldom so low, but there was never any heat of skin nor any approach to hectic. Bloodletting was occasionally had recourse to ; generally at her own request, as she always experienced almost immediate relief from it, "always feeling," as she expressed it, "her heart greatly lighter afterwards." During the whole period of her illness, the catamenia were occasionally, but irregularly present ; and generally on their reappearance after a considerable interval, she experienced relief of her pectoral affection. The following is my report of the 21st November:—Is, on the whole, much better, but she still labours under most of her original complaints. She is still affected with a fixed pain in the very same spot as at first, but this is much less, as are also the palpitation and dyspnoea. Both these however, especially the latter, are easily induced by bodily exertion, with great aggravation of the pain. Her sleep is much better than it was, but it is still disturbed by dreams and alarms, and is rarely prolonged beyond a few hours. Now she cannot lie at all on the left side. The lips still retain their purple hue. She has a very slight degree of cough. Pulse 100, regular and small. Tongue cleaner. Skin, as usual, cool and soft.

The uniform and exclusive site of this patient's pain is hardly larger than a large hand open, and occupies a space on the surface of the chest which may be compared to a truncated pyramid, the base of which is the border of the left short ribs, and the truncated apex the left nipple. The sternum bounds this space on the right, at least at its base. All this spot is extremely tender to external pressure, and it suffers from percussion of remote parts of the chest.

Stethoscope. Over the whole of the space above mentioned, the sound of respiration is entirely imperceptible, while it is perfectly natural over all the rest of the left side, before and behind, and even on the lateral parts immediately adjoining the left edge of this space. It is not, however, perceptible between this space and the sternum. Respiration is audible over all the right side before and behind, but decidedly less distinctly than on the left; it is more dull (and very dull) on the lower parts, yet it is to be perceived even some fingers'-breadth below the nipple. The same difference of intensity between the two sides exists on the back. There is no rattle. *Sound* and *impulse* of the heart, both very distinct and well defined (of both auricles and ventricles) in the cardiac region, but not of remarkable intensity. Sound very distinct over all the *pained spot*, and, in a slight degree, over the remainder of this side, before and behind, but very slight indeed on the back. Sound much more audible over all the *right side anteriorly*, especially above the nipple; but not at all on the right back. In no part of the chest is the action of the heart accompanied by any foreign sound. *Hægophonism* is no where perceptible. *Percussion* elicits a good sound over both sides anteriorly.

DIAGNOSIS. *Chronic Pericarditis, with effusion,—or adherent pericardium? Adhesion of the right lung, from antient pleurisy?*

REMARKS.

Various opinions as to the precise seat and nature of the disease above described, will probably be entertained by different readers. I adduce it on the present occasion, principally with the view of showing the advantage that may be taken, of the *negative* indications of the Stethoscope, in fixing the diagnosis of doubtful diseases. I think it will hardly be doubted that, throughout the whole course of this case, there was inflammation somewhere; and I think it results

from the last examination by the cylinder (the only one to be at all depended on), that this inflammation existed neither in the parenchyma of the lungs, nor in the pleura (at least at the time of the examination). It results, further, from the same examination, that some morbid state of parts displaced or obstructed the lungs in the vicinity of the heart,—and, also, that there existed no greater organic lesion of that viscus, than perhaps very slight dilatation of one or both ventricles. For these reasons, I conceive that a chronic disease of the investing membranes of the heart,—(viz. Pericarditis in some of its forms and stages)—rendered probable from the general symptoms, becomes much more probable from the non-existence of disease in other organs. At the same time, I am by no means prepared to say that a state of chronic pleurisy had not existed in some other part of the chest (probably on the right side) in the course of this disease: if such was the case, the general symptoms gave no indication of it, and the stethoscope was not applied with the view of settling the point;—all I mean to assert is, that at the time of the examination in last November, the disease was confined to the vicinity of the heart, and that the general symptoms, conjoined with the indications of the stethoscope, render it very probable that the disease was chronic pericarditis.

I need not remark that mediate auscultation was very inadequately performed in the above case. On this account, I build no further on its indications than is fairly warranted,—viz. as to the state of things at the period of the exploration in November.

It is also proper to observe that the stethoscope hardly gives any direct, certainly no very positive signs of Pericarditis (see Laennec, vol. 2. p. 378); it is chiefly therefore, I conceive, by its negative results that any advantage can be taken of it in fixing the diagnosis of this disease.

To those acquainted with the natural history of chronic inflammation of the serous membranes, the length of time that this disease has continued, will by no means militate against its being the affection I have supposed.

I believe this disease to be much more common than is usually imagined in England; and, considering its extreme obscurity, it is not wonderful that it is so little understood where examinations after death are comparatively so rare. (See Corvisart, p. 26.) In this case, and likewise in the two undoubted cases of Pericarditis that precede, it will be observed that the absence of febrile heat was a marked symptom; and it is worthy of notice that the want of this frequent concomitant of inflammation is considered by Broussais as in some degree characteristic of this affection.“Ce qui m’a le plus frappé, c’est la concentration du pouls et le défaut de chaleur fébrile. Lorsque les deux derniers se rencontrent chez un homme qui a été soumis aux causes des phlegmasies pectorales, et qui est à-peu-près dans l’état que nous venons de décrire comme propre à la pleurésie, lorsque surtout cet homme n’a point été épuisé par une maladie antérieure, on doit redouter la phlogose de la membrane séreuse du cœur et du péricarde.” (Phleg. Chron. 3^e Ed. T. I. p. 321.)

But, indeed, both pain and fever are almost as frequently absent as present, in the chronic inflammations of membranes.

CASE XII.

(Supposed) Dilatation of the Heart, from contraction of one of the valvular orifices.

July 23, 1823—Mr. N. ætat. 38. Subject to occasional attacks of rheumatism, but otherwise healthy, until five years since. At that time he had a severe attack of inflammatory Rheumatism which confined him to bed three weeks,

and which, his medical attendants informed him, was in the course of the disorder transferred to his heart.* Since that period, he has remained entirely exempt from Rheumatism, and has been in very good health, in every respect, except an affection of the chest which has continued to distress him ever since. This affection is, evidently, a species of *angina pectoris*. It comes on always suddenly, and almost always upon using exertion. He describes the complaint during the attacks, as a *severe burning* pain in the region of the heart, or rather under the xiphoid, always accompanied by a violent beating of the heart, breathlessness, and total incapacity to proceed, if attacked while walking, or to make any bodily exertion. The attack passes off gradually, on his remaining still, often with profuse perspirations. It is never attended by any pains or diseased sensation in the arms. The attacks are in general produced by walking uphill, by any kind of bodily exertion if at all considerable or unusual, or by mental emotion,—and, in a very especial manner, if any of these exciting causes are applied shortly after dinner. This is so much the case, that even the *slightest* exercise, immediately after eating, will produce it in a greater or less degree. This patient wants many of the usual attendants of organic disease of the heart. He sleeps well and soundly, and with his head low, and on either side indifferently. The pulse is now quite regular, between 80 and 90, with the individual beats, however, rather running into each other. He is pale. Appetite, bowels, digestion, urine, tongue,—all in a natural state.

The Stethoscope gives a very *weak impulse* in the region of the heart, but a *very loud* and *peculiar* sound. This sound is like a loud grating or croaking at each contraction of the ventricles, and is continual. The action of the heart

* This has subsequently been confirmed to me by the medical attendants.

is regular, in other respects. This loud and peculiar sound is very audible over all the anterior of the chest on both sides, and also on the back,—feebly on the right side, but distinctly on the left. It is particularly loud below the sternum and under the right clavicle.

The sound of the heart is very loud *above* the clavicles, and there is visible throbbing of the throat, but only slight. *The Respiration* not explored, except under the clavicles where it is rather indistinct. The pulse is soft and not strong.

DIAGNOSIS. Dilatation of the heart, from contraction of some of the valvular orifices.

PROGNOSIS. Death within a few years?

I recommended extreme temperance and quietude of body and mind, and the avoidance of all exciting causes.

REMARKS.

This is another case where the comparative mildness of the general symptoms, the regularity of the pulse, &c. might justify the belief of mere functional disorder in the heart, but which the stethoscope (I conceive) proves to be of a more serious character. From the imperfection of the exploration, it is impossible to say decidedly which of the orifices of the heart is affected; but I presume (if any) it must be either the mitral or sigmoid of the left side. My idea of the case is, that the degeneration of the valves (whether warty, bony, or cartilaginous) is at present only in so slight a degree as to offer little or no impediment to the transmission of the blood through the orifice, except when this is thrown in more than usual quantity upon the heart, as during exercise, or when the ventricle is compressed by a full stomach. It is, however, to be feared, that the morbid growth is progressive, and that eventually, and before long, the obstruction will become permanently felt, and finally produce the ordinary train of symptoms, and inevitably lead to death.

From the circumstance stated in the report of the exploration, of the sound being particularly loud under the sternum and the *right* clavicle, I should be disposed to infer that the obstruction was in the mitral valve, and that the two auricles and right ventricle were already considerably dilated.

P. S. March 21, 1824.—I have again seen this patient. His complaints are considerably moderated under a more circumspect and quiet regimen, but they still exist. The stethoscope detects the same very sonorous and harsh contraction of the ventricles, but perhaps in a less degree, than on the former occasion.

CASE XIII.

(Supposed) Original Debility [extenuation] of the Heart.

August 30, 1822. Mr. ———, ætat. 14, a delicate young gentleman, of a strumous family, and having lately lost a brother from Phthisis. Has been ailing for six months, the principal marks of disease being debility,—dyspnoea (no cough), tightness across the chest, and soreness of the same part when touched roughly, headache,—and a constant *sense of coldness*. This last symptom has been constant and very marked, throughout his whole illness. There has never been any heat of skin, nor yet great quickness of pulse: this has been generally soft and weak, somewhat quicker than natural, and occasionally irregular in force. The bowels have been torpid, but there have been no decided marks of disordered digestion. He is florid. Latterly he has slept very ill, and often awaked in great terror. He has also found that running rapidly up stairs has produced severe pain under the sternum, and such extreme exhaustion as to oblige him to lie down instantly. (This circumstance has only happened twice or thrice, and lately.) Within the last month, he has been bled twice, and each time found very great and instantaneous relief of his habi-

tual uneasy feelings in the chest. He can lie very well in any posture, but prefers keeping his head high. He sleeps very little. A deep inspiration gives pain, or rather an uneasy feeling of tightness under the lower half of the sternum, but does not produce the slightest tendency to cough. The heart is felt (by the hand) pulsating strongly,—or rather very obviously, but without great force.

The Stethoscope, in the region of the heart, conveys a loud sound, and a moderate impulse, and indicates occasional irregularity of contraction of the ventricles, but conveys no foreign sound. The instrument also detects the sound of the heart over the *whole* of the chest, before and behind, on both sides, feebly on the back, but most distinct on the whole right side anteriorly. The respiration is natural. N. B. The blood drawn was not at all buffy.

May 1824.—This young gentleman has remained nearly in the same state, unable to go to school, yet not confined to the house. He retains his usual fresh and florid colour.

REMARKS.

Does not this case afford an instance of a numerous class of diseases, little noticed by practitioners, which depend essentially on an original disproportionate power of the heart? The only morbid condition of the thoracic viscera, indicated by the stethoscope, is a slight enlargement and extenuation of the ventricles: Will this condition of parts account for all the symptoms? And if it does, will it lead to a rational practice? I conceive that both these queries may be answered in the affirmative.

Although the mere circumstance of the heart's action being perceptible over the whole, or greater part of the chest may, in many cases, indicate only an original thinness of the ventricular parietes, or other congenital peculiarity hardly amounting to disease;—yet, in such a case as the

present, where disease actually exists, with many symptoms which, although anomalous, can easily be referred to the heart,—the knowledge of the great extent of the heart's pulsation becomes of much greater consequence. In such a case as this, to *speculate* on the existence of a feeble or slightly dilated heart, and to endeavour to explain all the symptoms on the assumption of such a state, is to adopt an hypothesis which, however plausible, can neither satisfy the mind completely, nor afford sufficient grounds whereon to build a confident plan of treatment;—but when this condition of parts is actually proved to exist,—then all the explanations and reasonings, based on fact and mutually harmonising, constitute a theory which may be received as a legitimate and rational ground of practice.

In the instance before us, all the general symptoms appear to admit of ready and satisfactory explanation by the theory of a weak and slightly dilated heart: e. g. the feeble pulse—the universal coldness—the headache—the sluggishness of body and mind—the pains in the cardiac region—the disturbed sleep—the great and instantaneous relief from bloodletting, &c.

A just theory ought to lead to a good practice. In the present case, perhaps, in place of attempting to ward off inflammation in a subject predisposed to phthisis, by low diet and antiphlogistic treatment, we ought to endeavour to strengthen the muscular system by such measures as did not, at the same time, overmuch precipitate the transmission of the venous blood,—such as generous diet—friction—*pectoral gymnastics* (with the view of enlarging the chest)—warm clothing—the shower-bath, or partial bathing of the chest with vinegar and water, &c. &c.

CASE XIV.

Angina Pectoris, from (supposed) weakness of the parietes of the Heart. (Nervous or Spasmodic Angina.)

Chichester Dispensary, May 30, 1823. Thomas Ide, ætat. 37, labourer, has always been a very hard-working man, and enjoyed very good health till his 28th year. Since that time he has constantly suffered from his present complaints, in a greater or less degree, but has found them always worse in the *spring* and *fall*, and always better during the winter. He has been suffering severely for some time past, and is at present incapacitated for labour by his disease. This consists simply in the following symptoms, viz, a constant disagreeable sense of fluttering at the pit of the stomach, perceptible, but in a very slight degree, while in a state of quiescence, or gentle exercise, and at times instantly aggravated to a violent degree of beating, on using any severer bodily exertion. At these times the palpitation is attended with very great dyspnœa, and a universal and overpowering sense of feebleness and faintness. This description comprehends the whole of his uneasiness in the paroxysms, which have never came on but during bodily exertion. Severe labour of any kind, quick walking, or going up stairs with even moderate speed, will bring these on at any time. He has scarcely any other complaint. His breath is perfectly natural and good when he is quiet, and he says his life would be very comfortable without the obligation of bodily labour.* He can lie on either side, but suffers more from the fluttering sensation of the præcordia when lying on the right side. He sleeps well and soundly, with his head as low as usual, and he is undisturbed by frightful dreams, or sudden awakenings. Appetite good; bowels al-

* A Cornish miner, labouring under a similar affection of the breath, once stated to me the condition of his respiration, in the quaint and shrewd expression—"that he would make a very good *Gentleman*."

ways regular; tongue clean. Pulse 60, soft and perfectly regular. The only other feature of his complaint on which he dwells, is what he calls "the wind," and which he describes,—not as an habitual state of flatulence (to which he is not at all subject), but as a sensation of distension from wind in his stomach and bowels, during the paroxysms. He feels at the time, as if the discharge of flatus downwards were essential to his relief, and he believes that the paroxysm is never mitigated until this takes place; and such discharge does, in fact, commonly happen once or twice during the first half-hour after the seizure. He says the paroxysms generally come on gradually, but sometimes quite suddenly, and always go off gradually. His countenance and complexion are natural; but he is low-spirited.

STETHOSCOPE. *The Heart.* No *impulse* whatever in the cardiac region or elsewhere. *Sound* in the cardiac region remarkably distinct* but not particularly loud,—the respective contractions of the auricles and ventricles unusually definite, and divided by a considerable interval of repose. Rythm and sound perfectly natural. Sound audible over all the chest; very distinct over both sides anteriorly, and nearly equally so; perceptible, but in a very moderate degree, on the back, and nearly equally so on both sides. The sound is perhaps as loud along the whole length of the sternum as in the region of the heart, and louder than under the left clavicle. Under the sternal extremity of the left clavicle, the sound is particularly clear, though not remarkably loud; the sound of the contraction of the *auricles* is, in particular, distinct and clear,—much louder than that of the ventricles, and clearer than is usual. It would appear, also, that the interval of repose, between the contraction of the auricle, and the subsequent contraction of the ventricles, is longer than usual (the pulse is 60).

* This no doubt owing greatly to the slowness of the pulse.

Respiration not much explored, but it is very low generally, except on voluntarily quickening the inspirations, when it is sufficiently audible, and of the natural character, wherever it was tried.

The only medicine I prescribed for this man was a pill consisting of Extract: Colocynth. c. gr. ij, Ext. Hyoscyam. et. Pil. Hyd. aa. gr. iss. Ipec: gr. ss.—(ij. h. s. quotidie.) These pills he continued to take for several months, and considered himself as *remarkably* benefitted by their use. After taking them a fortnight, and *remaining quiet*, he returned to work, and continued at his usual labours throughout the summer, with much diminution of his habitual *fluttering*, and a much rarer repetition of the paroxysms of palpitation. During the harvest, however, while working very hard, he suffered considerably, yet still, as he conceived, very much less than he had been accustomed to do, under such circumstance of exertion.

When last heard of (in Nov.) he was still taking his pills, and continuing his work.

REMARKS.

This is another good instance, I conceive, of that numerous and distressing class of diseases, which depend essentially on no other organic alteration than an unusually thin, or, at least, slightly dilated and consequently weak state, of the ventricles of the heart. This condition of the organ is, as I have formerly observed, generally congenital, and predisposes to, and lays the foundation of, many diseases, not only of the heart, but of the system *generally*. According to the particular nature of the exciting causes,—their frequent or rare application, &c., whether bodily labour,—mental anxiety,—high-living producing other diseases, such as dyspepsia, nervousness, &c. &c.; the native debility of the organ will be either stimulated into organic change, or will assume such violent derangement of func-

tion, as will emulate in severity, some of the most distressing of organic diseases. It is, I conceive, under such a state of things that those numerous cases of *Angina*, which do not prove speedily fatal,—that is, which are not mere symptoms of organic disease of the heart,—arise: And their origin is readily explained, since it seems to follow as a natural consequence of structure, that an organ which is preternaturally weak, and at best inadequate to the due performance of its functions, should more readily suffer from morbid causes, than one that is vigorous.

A preternaturally weak heart—that is, a heart whose muscular power is disproportioned, more or less, to the due impulsion of the blood through one or both circulations—the lungs and system generally,—must be, and I believe is, the fruitful primary source of many disorders; and must, and does, modify, in a greater or less degree, almost all other diseases. A weak heart will necessarily occasion a languid circulation,—a superabundance of blood in the veins generally, and in some parts of the system especially.

The connexion of apoplexy with diseases of the heart is generally known; but I believe the influence of the very common congenital weakness, of which I am now speaking, in producing headache and other cerebral diseases, is but little attended to. I am, however, convinced by experience, that this influence is a very general and a very powerful one.

To judge from the history and general symptoms of Ide's case, one might be disposed to consider his disease to be as much an organic affection of the heart, as many others recorded in this volume, which certainly are so.

The symptoms are, at least, apparently as severe as those of Mr. N.'s (Case XII); and yet, if the indications of the Stethoscope are to be depended upon, the importance of the two diseases is very different, and the result will probably be also very different.

In the present case, mediate auscultation points out no organic disease, unless it be the general thinness of the ventricular parietes, which unquestionably predisposes to serious and fatal disease (dilatation), and would probably lead to it, under the constant stimulus of bodily labour, but which, under more favourable circumstances, and with due care, does not necessarily prevent the enjoyment of a moderate share of health, or even the attainment of longevity. In the other case, on the contrary, there exists (I presume) a morbid growth, which, in its nature and from its situation, is almost certainly progressive, and which eventually, in defiance of all skill and care, must lead to inevitable death. In both these cases, it is probable that the cause of the paroxysm is the same, viz. the presence of a quantity of blood in the heart, too great relatively to the powers of the organ to transmit it; but in the one case the obstacle arises from the mechanical obstruction of the orifice through which it is to be propelled, while in the other, it is the consequence of inadequate force in the propelling agent.

I do not pretend to give an opinion in what manner the slightly alterative pill gave relief (if it truly did give the relief experienced) in this case; yet when we call to mind how readily, and by how many seemingly trifling causes, the pulse is changed—and consequently the action of the heart;—and recollect the connexion in the present case (however inexplicable) between the mitigation of the paroxysm and the discharge of flatus,—and indeed the common connexion of this kind in cases of angina;—we cannot be surprised that such a kind of treatment was beneficial.

CASE XV.

Sympathetic Angina Pectoris.

August 12, 1822. Miss ———, ætat. 43. This patient, a lady of a cultivated intellect and sensitive temperament, describes herself as having been always a bilious subject, yet pretty strong and active, and in the habit of taking occasionally great bodily exercise. About two years ago she began to be affected with dyspnœa on going up stairs. This affection gradually increased, and, after a short time, was excited by the slightest motion. In the course of a few months, in addition to the dyspnœa, a violent paroxysm of pain under the sternum, shooting to the back and down both arms,—in short a paroxysm of *angina pectoris*,—was produced by almost every attempt at motion. This state of things has continued to the present time, or rather seems to have been progressively getting worse. *Now*, she cannot walk across the room, or dress herself, or indeed use any kind of bodily movement, without bringing on the paroxysm. She is also subject to frequent palpitation, even, when at rest, and to a constant and most distressing noise in the ears. But for these two last named symptoms she feels tolerably well, when lying still. She has no permanent dyspnœa whatever, nor pain nor stricture of the chest, and never appears to have been affected with any acute inflammation of any of the thoracic viscera. She is never hot or feverish, although her skin, she says, is always dry. She can lie indifferently on either side or on the back, and with the head low, and her sleep is undisturbed by frightful dreams or sudden startings, but broken, after intervals of a few hours, by an attack of palpitation. There is no indigestion properly so called, but the bowels are torpid, and the appetite impaired. The catamenia are regular. She has been for four years subject to a considerable discharge from the hæmorrhoidal veins, coming on regularly after

every menstrual lustration: this discharge has not been present for six weeks. Pulse 90, quite regular and of moderate strength. Tongue clean. Urine of natural quantity.

I applied the stethoscope twice in this case. At my first visit, the sound and impulse of the heart were found moderate in the region of the heart, but the former audible under the right clavicle. [At this time the patient was somewhat agitated]. At my second visit, on the 23rd, she having remained perfectly still and in the recumbent posture, by my recommendation, the action of the heart was found perfectly natural, both in rythm, impulse, and extent of pulsation. The Respiration also was found to be natural.

Considering this case as one in which the affection of the heart was most probably nervous or sympathetic, or in which the organic derangement, if any, was but slight,—after ordering a few oz. of blood to be taken away as an experiment (and the loss of which was not beneficial), I enjoined absolute rest in bed, and prescribed the following mild alterative pill and draught, with the view of improving the digestive powers and the intestinal functions: Pil. Hyd. Ext. Col. c. Ext. Hyoscyami aa grj. Ipec: Pulv: gr. $\frac{1}{3}$ M. ft. pil. ter quotidie sumenda. Haust. merid. ex Infus. Rhei, Infus: Calumbæ aa dr. vj, Spirit. Myrist. dr. ss.

This plan seemed to be productive of great benefit, as the appetite and strength improved, and the paroxysms gradually disappeared under its continued use. It was necessary, however, for the patient to confine herself for many months. She has been now (Nov. 1823) for more than half a year comparatively well.

May 1824. She still remains comparatively well, occasionally subject to slight palpitation, but never to any of the severe paroxysms of angina.

REMARKS.

I consider the above case as an example of the first

stage of a numerous class of organic diseases of the heart, namely, disordered action of the heart arising in a bilious and nervous subject, and proceeding, if unchecked, to irremediable disorganization. I have since learned that the subject of the above case, had suffered for some time previously to my first visit, much mental anxiety; and I think I have been able to trace the origin of more than one fatal disease of the heart, to this combination of causes—viz. disorder of digestive organs—nervousness—mental anxiety. And the rationale of the morbid change is not difficult.

In this case, perhaps the common symptoms, independently of the indications of the stethoscope, were sufficient to point out the absence of serious organic alteration; yet, I think, the judgment founded on these, derived very great additional support from the negative results furnished by that instrument. No medical man of experience will say that, with the above symptoms, there *might not have been* structural disease. Had this been indicated by the stethoscope, all doubt of the nature of the disease would have been removed; while by the absence of all such indication, the opinion of the contrary condition of the affected organ, founded on the survey of the common symptoms, was in some degree raised to a certainty.

CASE XVI.

(Supposed) Dilatation of the Heart, with contraction of an orifice.

Chichester Dispensary, May 23, 1823. Mary Horn, ætat. 27, has been from infancy a very weakly, sickly girl, and affected, in a certain degree, with her present complaints, which, however, have greatly increased within these six years. Her principal ailment consists of a constant sense of oppression in the left side of the chest, and chiefly in the immediate region of the heart, with very frequent, violent and painful palpitations, accompanied by great dysp-

noea, and brought on by any and every considerable degree (and often by even a very slight degree) of bodily exertion. Four or five years since, she had much cough and spitting of blood, and she frequently suffers now from severe coughs and colds. For several years her legs have been œdematous, and are now of a deep lilac colour. Her face and lips are of the same livid hue, but in a less degree. Her legs and arms are almost always cold. She has always been obliged to lie with the head high; and her sleep is frequently disturbed by frightful dreams and sudden awakenings. She has never been able to lie on the left side, but lies commonly on the right, and rarely on the back. She is, and has always been, extremely low spirited. The catamenia had been generally irregular and very scanty; but of late they have become copious and frequent. The appetite is generally bad, and the bowels irregular, either too loose or too confined. She often suffers from headache.—A deep inspiration gives no pain, but the breath is oppressed and short. The pulse is 80, extremely feeble, indeed hardly perceptible, but regular. Palpitation is not present now, but the action of the heart is perceptible to the touch, but with feeble impulse. There is a very strong vibration or throbbing visible in the throat, over the course of the carotids, especially the right; and this, upon examination, is found to depend on the pulsation of those vessels. They, moreover, communicate to the finger a most distinct vibratory or thrilling sensation, which cannot be defined, but which (though a sensation of touch) is, to my mind, best illustrated by being compared to the chirping *sound* of the grasshopper.

Stethoscope. In the region of the heart there is hardly any *impulse*, but the *sound* of the heart's action is very loud, and, in place of the natural double sound of the auricular and ventricular contractions, consists of one continuous sound, resembling a *loud rasping*, and interrupted

at regular intervals, by a somewhat clearer sound. There are no intervals of *silence* (or of the total absence of sound). This extremely loud and hollow grating sound is much more distinct at the sternal side of the cardiac region than at the other, and is remarkably distinct along the whole sternum, especially over its upper half. It is also very distinct over the whole chest, before and behind, but not very loud over the right back. The same sound is perceptible, and equally loud, *above* the right clavicle, over the tract of the carotid artery. There seems to be no positive *irregularity* of action, further than in the confusion of the auricular and ventricular contractions into one sound: this confusion is complete on the right side of the chest; on the left side, the sounds of the two contractions are more distinguishable. *Respiration*, slightly explored, seems perceptible over the whole chest, and very loud (puerile?) over the superior parts. *Percussion* not tried.

DIAGNOSIS. Great dilatation of the heart, without hypertrophia, especially of the right side. Contraction of some of the valvular orifices,—most probably of the sigmoid of the aorta,—perhaps the mitral. Dilatation of the arch of the Aorta? Foramen ovale open?

PROGNOSIS. Death within a year or two, perhaps suddenly.

Dec. 22.—This patient has remained much in the same state, staying at home incapable of doing any kind of work. I applied the Stethoscope once more, with the view of clearing up some of the obscurities in the former exploration. At this time, I saw the girl in her mother's cottage, and in what may be considered as her habitual state,—not suffering from exertion, as was perhaps somewhat the case during the former examination, she having walked, on that occasion, two miles to the Dispensary. To day, her pulse was 60 or 66, extremely weak and small, but quite

regular, except occasionally for a single beat, at long intervals. There is still a very visible undulation in the neck, but whether arising from the carotids or jugulars, I am not quite sure. Over the course of the former the *grasshopper-thrill*, formerly mentioned, is still very sensibly felt by the finger, but more feebly than on the former occasion. The hand detects no impulse whatever in the region of the heart. The hands and legs and lips are still livid.

Stethoscope. No impulse whatever in the region of the heart. Sound not extremely loud, but most distinct and peculiar. The heart's rythm consists of (1) a loud, hollow, harsh, grating sound, of considerable duration, terminating in, rather than followed by (2), a momentary sound of a clearer tone, but so brief as to be rather like the abrupt termination of the other than a distinct sound by itself; this is followed by (3), a short interval of repose, which is succeeded by the loud sound formerly mentioned. Dividing the whole space into nine parts, I should say that, perhaps, six are occupied by the harsh sound, one by the brief one, and two by the interval of repose. On the right side of the usual site of the heart, and under the lower half of the sternum, the grating sound is fully as loud and distinct, as in the centre of the cardiac region; and *there* (in the former place) the commencement of the sound is rather like the hissing of the grasshopper, than the rasping of a saw or rough file. Over the upper parts of the right side, and especially under the clavicle, the harsh grating sound is louder and more distinct than in the region of the heart, and the brief subsequent sound is scarcely perceptible; this grating sound is decidedly more distinct on the right side and under the sternum than on the left side of the cardiac region, and outside the nipple. Under the left clavicle, the grating sound is still rougher than in the cardiac region, and although the *other* sound is more distinct than on the right side, it is less so than on the left

side of the cardiac region: it is, however, more distinct without the stopper (under the clavicle). *Percussion* still very imperfectly used; it however seemed to elicit a good sound from each side under the clavicles. Respiration puerile under both clavicles, especially the right, louder than natural also under the left, but, owing to the extreme loudness of the sound from the heart, it is difficult to expore it. Certainly it is not at all perceptible over a large space in the cardiac region;—I should say any where below the mamma,—nor (I think) immediately to the right side of the upper part of the sternum.

REMARKS.

As this poor girl's sufferings are not yet terminated, we have no means of proving the fidelity of our diagnostics. From the history and general symptoms of the case, there appears some reason to believe that the *foramen ovale* in this case has remained open from birth, or, at least, that some malformation productive of an equal degree of irregularity in the transmission of the blood, has existed. From the stethoscopic examinations above recorded, I think there can be little doubt that there exists, at least, a contraction of some of the orifices of the heart, and a very considerable dilatation of some, if not all, its cavities. Perhaps, the very existence of this dilatation affords an additional reason for believing in the congenite patency of the oval hole, since it is well known that this species of malformation almost always induces dilatation of the cavities. Since, however, it is certain that as great a degree of livor of the extremities, coldness of the surface, &c. as exist in this case, are often found in cases in which the foramen ovale is not open; and as it appears hardly doubtful that either the mitral or the aortal orifice is contracted in the present instance, it is, perhaps, more philosophical to consider the malformation as not extending be-

yond this. Hitherto I am unacquainted with any sign of this open state of the foramen ovale derived from mediate auscultation.

From the account of the last examination, given above, I have little doubt that the aortal orifice is contracted, and that all the cavities of the heart are dilated, “passively” according to the nomenclature of Corvisart, or “without hypertrophia” according to Laennec. It is so well known that a general dilatation of the cavities of the heart commonly, if not always, supervenes to a diminution of the aortal orifice, that on the one being ascertained the other might be fairly presumed; in the present case, however, the existence of the dilatation is as clearly indicated, as that of the contracted orifice, by the stethoscope. Nevertheless, the present case is not (to me) without some difficulties in studying it according to the rules laid down by Laennec.

The louder sound on the right side, and the more indistinct perception of the systole of the auricles, point out greater dilatation of the right ventricle.

Is the very loud sound perceived under and over the right clavicle, when combined with the marked thrill in the carotids, indicative of a dilated aorta?

May, 1824.—This patient still remains nearly in the same state.

CASE XVII.

(Supposed) Hypertrophia with Dilatation of the Heart, and contraction of an orifice.

Chichester Dispensary, Dec. 19, 1823. James Berryman, ætat. 20. Farm Servant, says he enjoyed good health, and was not short-breathed, when a boy. Several years ago, however, he appears to have been laid up, for 12 months, with *swellings*,—probably of a dropsical nature.

During the last five or six years, he has been subject to great breathlessness and palpitation of the heart, on using any considerable degree of exertion, such as working hard, running, going up hill, or up stairs, &c. He has also had frequent Epistaxis in a slight degree, but his complaints were never so severe as to incapacitate him for labour, until within the last two months. During the last five or six years, his present complaints have been progressively gaining upon him, and especially during the last twelve months. As has been already mentioned, he has been quite laid up during the last two months, from a great aggravation of his former sufferings, and the supervention of some additional symptoms. Previously to this recent aggravation, he felt no inconvenience in the horizontal posture, but slept well and soundly, and on either side indifferently. He can still lie on either side equally well, but during the last two months he has hardly lain down at all, on account of a severe cough, and great increase of dyspnœa on attempting to lay his head low. During the last two months he has been affected with a *constant* sense of painful palpitation and oppression in the region of the heart, and occasionally he has felt a momentary but violent pang shooting through to the shoulder. This habitual oppressive pain in the cardiac region, is not increased by motion, or other causes which immediately aggravate the palpitation and dyspnœa. He feels the action of the heart (he says) in his head, on lying down. Since the increase of his complaints he has dreamed much more than formerly, and his dreams are frequently frightful and distressing—(e. g. of falling down chalk-pits, &c.), but never rouse him in affright. He says he has remarked that, for the last five or six years, his hands and feet have been much bluer than other people's, and he thinks he has been always more chilly and more impatient of cold, than his neighbours. He always feels worse when cold,

and most easy when he is warm, and warmly clad. The discoloration of the extremities, he thinks is less since he has given up work. It is, however, still very conspicuous. The face and lips are at present florid, only with a slight tinge of blue, but he says he always looks very blue in cold weather. All the other functions seem to be well performed. Appetite good; bowels regular; urine of natural appearance and quantity; tongue clean; skin cold; pulse, when sitting still, 126, not full, but of tolerable strength: on exerting himself a little to pull open his clothes to expose the chest, the pulse was immediately increased twelve beats, and became small and feeble.

The heart is seen and felt pulsating over a very large space; it is *felt* over a space five or six inches in diameter from the sternum outwards, and from two inches above the nipple to the edge of the short ribs, nearly, over this space, especially on the left side of it, the “*fremissement cataire*,” or thrilling sensation, is very distinct.

The Stethoscope gives a very great impulse and a very loud sound over all the above mentioned space. The sound is almost single, that is, the contraction of one cavity is so prolonged, and performed with so much noise, as to render the sound of the other almost imperceptible. The impulse and sound are simultaneous, and both synchronous with the pulse at the wrist. The sound is harsh and croaking, like a file upon wood, and constant,—that is, constantly repeated at each systole. The sound is very loud over all the cardiac region, but the harsh grating tone of it is less on the right side of it. It is very distinct over all the right side of the chest before, and there seems to be also *impulse* under the sternal end of the clavicle of this side, and along the right side of the sternum. Under the left clavicle the sound is different, the grating sound being much less distinct, and the other sound (of the auricles) very obvious, and the

rythm seems pretty natural. The sound is very distinct over the whole of both backs, but is by much the loudest on the left. The loud grating sound is very distinct under the left clavicle with the *open S.*, and *most* so on the axillary face. *Respiration* puerile under the left clavicle,—audible nearly as low as the nipple, but not at all below this, nor outwards as far as the line of the outer edge of the axilla; not clearly audible over the lower parts of the right side except on a deep inspiration; more audible on the upper parts, but not puerile as on the left side; audible over both backs, but not very distinct, except on a quick inspiration. There is no rattle any where. Over the greater part of the chest, the very loud sound of the heart masks and drowns the murmur of respiration.

There is a very perceptible pulsation in the throat, just above the clavicles, but whether of the jugulars or carotids I am not quite sure; the latter are felt by the finger beating strongly; and the left, under the angle of the jaw, feels considerably dilated, and communicates a very distinct thrill, like the heart.

Percussion elicits a very dull sound over all the left side, a clear one over the upper parts of the right, one more dull over the inferior parts, but much clearer than on the left side.

He has been twice bled, with great and immediate relief.

DIAGNOSIS. Dilatation with Hypertrophia of the Heart; contraction of the mitral or aortal orifice. Patency of the foramen ovale? Dilatation of the Aorta? Perhaps the ventricular parietes not thicker than natural.

PROGNOSIS. Death within half a year or a year.

REMARKS.

This case seems very similar in many respects to that of Horn (Case xvii, page 178); only here, I presume, there

is not extenuation, as well as dilatation, of the ventricles. In both, I think there is sufficient evidence of contracted orifices. I shall take care to watch the final progress of this case.

CASE XVIII.

(Supposed) Hypertrophia with Dilatation of the Heart.

Chichester Dispensary, May, 23, 1823. James Waller, ætat. 23, a day-labourer, six feet one inch high, and very strong and healthy, until last October. At this time he fell, with a heavy sack of wheat on his back, and pitched with his left breast on the sill of a door, with a shock of extreme violence. This caused most severe pain in the chest, and was instantly followed by spitting of blood, which continued for several days. The pain, which he points out to have been in the very region of the heart, went off after a few days, but was succeeded immediately by swelling of his legs, and by dyspnœa. This dyspnœa was at first severe, and, for several months, constant, whether quiet or not; latterly it has been less, and little urgent or indeed perceptible except on motion. He continued at work for two months after the accident, but was then obliged to desist on account of a return of the spitting of blood and a severe pain in his *right* side. This pain went off after about a month's continuance, and he was thinking of returning to his labour, when he was suddenly seized with a most violent pain in the region of the heart, attended by excessive palpitations. *This* pain lasted, also, about a month, and then went off; but the palpitations have never subsided. During the first fortnight after the sudden attack of pain in the region of the heart, he was altogether unable to lie down; but previously to that period, and since, and *now*, he can lie down with his head as low as when in health, and with equal facility on either side; and he sleeps very soundly, without

dreaming or alarm. Ever since this attack in the left side, *stooping* produces vertigo, and a state which he compares to the effect of intoxicating liquors. All kinds of bodily exertion, such as walking, and especially going up hill, increase the palpitation or habitual state of over-action of the heart, and augment the feelings of distress constantly referable to that spot. His appetite and bowels are regular. His mind is evidently very considerably depressed, and he says his thoughts are confused.

The pulsation of the heart is *seen* very distinctly over the left side of the chest; the impulse is felt by the hand to be very great, and very perceptible across the lower half of the sternum as far as the right nipple. The carotids are also seen and felt beating very strongly all along the neck. The pulse at the wrist is not very full, but very strong and regular, about 100.

STETHO-COPE. *Impulse* of the heart is extremely great in the cardiac region, so as to convey a strong shock to the head, through the instrument; but there is very *little sound*. The impulse is synchronous with the pulse; and there is scarcely any shock or sound to be perceived answering to the contraction of the auricles. The impulse or shock, without sound, is strongest in the line of the nipple, and four or five inches below it. Under the middle of the left clavicle there is a very distinct and loud sound (with very slight impulse) resembling a hollow murmur, and almost *single*;—that is, there is only one action or sound, answering to the contraction of the ventricles (the pulse). Over the left axillary face, the sound is very loud, and is not so much a grating intermitting noise, as a regular, continuous, hollow tone; a similar sound is very distinct a little way to the left of the nipple, on this side. Sound and Impulse very distinct over the lower half of the sternum; and the *sound* very loud over all the right side anteriorly, and

without any grating or roughness; perceptible, also, over all the back, on both sides, but much less loudly than anteriorly.

Respiration not much explored,—audible on the back, but drowned before by the loudness of the sound of the heart's contractions. *Percussion* does not give pain in the region of the heart, but does under the right nipple, over the site of the pain formerly experienced there. He is constantly sensible of a great and very disagreeable sound in his ears: which I found, on trial, to be greatly and instantly relieved by compression of the carotids. The præcordia and right Hypochondriac region appear to be very full.

His complexion is still very fresh and pinky; but he says he is much paler than when in health.

DIAGNOSIS. Hypertrophia with Dilatation of the Heart—in a great degree, without valvular disease Hypertrophia principally of the left ventricle? Hypertrophia with dilatation of the right? **PROGNOSIS.** Death.

Jan. 2, 1824. I saw this man again, for a few minutes to day, and was rather surprised to find that he had been following his labours, as a farm-servant for the last five months; having returned to work about two months after I saw him! He has been, of course, greatly better, but he says his complaints are by no means removed, and that *hard* labour is sure to excite palpitation and dyspnœa. [His present place is an easy one.] I applied the stethoscope, but hastily and only for a minute or two. The rythm of the heart was regular, and the *impulse* not much above the natural. The *sound*, however, was still loud under the sternum, and over the right side; and under the right clavicle, the sound was particularly distinct, and with the hollow harshness of dilatation.

Upon being questioned, he now admits that he was

under a considerable degree of mental agitation during the former examination, although he denied this at the time. He had also, on that occasion, recently walked to the Dispensary.

REMARKS.

This is the case formerly referred to in the Remarks on Case III. (p. 101); and I consider it highly important, as an instructive example of the errors likely to be committed in our examination of patients, without the necessary precautions there mentioned. There can be no doubt that during my first exploration, this man was labouring under a temporary access of palpitation; and it is equally evident from the Diagnosis and Prognosis then recorded, that (from unpardonable inattention) I mistook this transient excitation, for the habitual condition of the patient. It is much to be regretted that my subsequent examination was unavoidably so superficial; as it hardly furnishes sufficient materials for detecting the extent of the former error, or fixing the true state of the disease. I am still disposed to believe, however, after making all due allowances for the accidental exaltation of the phenomena at my first exploration, that the indications deduced from these were substantially correct in *kind*, and erroneous only in *degree*. I found this opinion on the peculiar characters, and relative intensity, of *the sounds*, both at the first and second examinations. Admitting the whole of the preternatural *Impulse*, perceived at the first exploration, to have been entirely the result of the accidental excitement,—without the admission of *Hypertrophia*, of one or both ventricles, how shall we be able to account for the almost total *absence of sound* in the very region of the heart? and without the admission of *Dilatation*, of *one* of the ventricles at least, how shall we explain the very loud sound perceived at a distance from the cardiac region?

Besides, I think the *peculiarity* of the sound at both examinations, and the range of it at the last, are sufficiently conclusive as to the existence of, at least, Dilatation.

After making these explanations and allowances, I am still disposed to adhere to the *Diagnosis* and *Prognosis* originally recorded; only deducting from the intensity of the former, and postponing the accomplishment of the latter. I shall take care that the result of this case, whether favourable to the patient or to the diagnostic and prognostic credit of the physician, shall not be withheld from the public.

Besides these errors of commission, this case, like most others in this volume, contains grievous ones of omission. In particular, the account of the Respiration is most faulty. There is reason to believe from the history of this case, that pleurisy had existed at one period, perhaps on the right side: a proper exploration of the respiration, conjoined with Percussion, would have gone far to ascertain this point, and also another of equal or greater importance to a correct diagnosis in this case, viz. the extent of the chest occupied by the heart.

What was the immediate effect of the injury this man sustained, on the heart or lungs?

CASE XIX.

(Supposed) Valvular disease, with Dilatation of the Heart.—Pulmonary Catarrh.

Chichester Dispensary, January 29, 1823. William Crees, Shoemaker, ætat. 55, has been short-breathed from childhood, upon using any considerable degree of exertion, and for many years past has been very liable to catch cold, having suffered more or less in this way every winter. These attacks appear to be, from his account, the common pulmonary catarrh (but accompanied with so much dyspnœa

as to resemble Asthma), terminating as usual, with greatly increased bronchial secretion. For the last few years, his breath has been much more frequently and severely affected, as he has not been able, at any time, to walk fast, and still less, to go up stairs or up hill, without suffering extremely from dyspnoea and palpitation. During the above period there have been also partial dropsical swellings of his limbs occasionally. He has, nevertheless, continued to work at his trade. He has had a very severe attack of his old complaint within these few days, which still continues. The difficulty of breathing is at present extreme, and accompanied by a very loud wheezing; and he suffers occasionally from a pain, shooting through his chest from about the middle of the sternum to the back. He has not been able to lie down at all since the attack. He has also a good deal of cough, but without any expectoration. The pulse is quick, very irregular, and intermitting.'

The Stethoscope gives the sound of *respiration* perfect over all the chest, and accompanied in every point, by an extremely loud and most distinct *sibilous or sonorous rattle*. [Having been unable to note down at the time the result of my examination, I am unable to state positively now (29th) what was the state of the heart's action; except that it was very irregular.—V. S. Infus: Digitalis.]

29th—Blood not inflamed. Greatly relieved by V. S. He was able to lie down the same night, and began to expectorate next day. Has been taking the Digitalis, which has brought the pulse down to 54; it is now quite regular. Oedematous swellings disappearing. *The Stethoscope now gives no rattle* whatever, and indicates a natural and moderately loud respiration.

Feb. 21—As well now as he has been at any time for some years. Pulse very irregular. *Discharged*.

Dec. 19—This man has continued since I last saw

him much in his usual state, working at his trade, and considering himself as tolerably well, during the summer months. Since the approach of winter, he has felt his breath somewhat more oppressed, but has not had any severe paroxysm of Asthma yet. I have examined him to-day, merely with the view of ascertaining the condition of his circulation and respiration in a state of comparative health.

He has hardly any wheezing at present, but he is somewhat out of breath from the exertion of walking to the Dispensary. The pulse is small, feeble, irregular, and under 70.

Percussion (not very fully tried) gives a good sound on both sides anteriorly, but a duller over the left than on the right back.

THE STETHOSCOPE. *Respiration* puerile over the superior parts of the *right side* anteriorly, as low as the nipple, and without any rattle; perceptible over the remainder of this side (anteriorly), but much duller below the nipple; and, at the very lowest point, audible chiefly by means of a sibilous rattle; sufficiently distinct over the right back, —loud above, but dull on the inferior parts.

Left side. Respiration puerile over the upper parts (anteriorly), but less so than on the right side, ceasing to be perceived at a little distance above the nipple, and not perceptible over the whole space below this to the margin of the ribs, and as far outwards as midway from the nipple to the axilla (over which space the action of the heart is very perceptible); perceptible over all the back, but only in a very slight degree on the inferior parts, much louder above, yet every where decidedly less distinct than on the right side.

Circulation. Action of the heart felt (by the hand) very distinctly over a small space between the 6th and 7th ribs, under, and rather outside of the nipple, with something

of a vibratory thrill (*purring*), yet with a very feeble impulse. In the same place the Stethoscope detects hardly any *impulse*, but discovers a very marked and peculiar sound. The *rythm* of the heart is unnatural, and consists of one very lengthened, comparatively loud, grating sound, and one very brief and low, without any interval of repose. Sometimes this louder sound appears to me synchronous with the beat of the pulse, sometimes alternating with it; — not that it varies, but that the same sensation is judged differently of. The louder sound is decidedly of that harsh *rasping* or *sawing* character, produced by an unnaturally lengthened systole, and supposed to indicate a contracted orifice. In the present case it is not extremely loud, but extremely distinct, and is so far continuous as to be perceived as frequently, and as regularly, as the arterial pulse. Sometimes there are felt a few consecutive short sounds of the same kind, as if the usual lengthened stroke of the saw were broken down into several small ones. Although strikingly resembling the action of a distant saw upon wood, there appears to me less *roughness* in the sound than I have often observed; yet its general character is as well marked as I have ever found it. It is probably owing to the extreme brevity of the other alternating sound, that it is found a matter of difficulty to ascertain whether this (of the saw) be from the auricle or ventricle. On my first trial I considered the louder sound as synchronous with the pulse; on a second and more mature examination I thought it alternating with the pulse: I am, however, by no means satisfied of the entire correctness of my observation.

Sounds the same in kind, but much less in degree, are perceived under the lower part of the sternum, and along the sternal side of the cardiac region; only slightly audible over all the right side anteriorly, and not at all on the right back, and not loud along the superior half of the

sternum. The sound is more audible over the inferior parts of the right side anteriorly ; but with little or none of the rasping. It is only heard in a slight degree above the left nipple and under the clavicle, and with very little of the peculiar character observed in the cardiac region. It is very distinct over all the left back, and here the sawing sound seems as if mellowed down so as to resemble a faint but clear silvery bell-note, only hollower.

The intensity of the sound in the region of the heart seems to vary considerably at different times.

DIAGNOSIS. Contraction of the aortal or mitral orifice, from degeneration of the valves ; dilatation of the left ventricle (or auricle). Obstruction of the lower lobes of the lungs.

PROGNOSIS. Death within a few years.

REMARKS.

The case above detailed is one of those manifold affections usually classed under the comprehensive name of *Asthma*. Whether or not the Diagnosis of the cardiac disease, deduced from the exploration of the stethoscope, and stated above, be correct or not, I cannot positively assert. If correct, however, as I have every reason to think it is, it affords a striking proof of the value of the means by which it has been established. The general symptoms in this case unquestionably indicate some affection of the heart, yet I presume that, from the comparative mildness of these, and their long duration, few would feel justified in drawing so bad a prognosis as I have done from the information of the stethoscope. Exclusively of the disease of the heart supposed to be made out, I conceive that there exists some morbid condition of the inferior lobes of the lungs,—some cause obstructing the natural respiration of these lobes, either within or without them. Whether this arises from ancient induration, from an œdematous state of these lobes,

or from a partial hydrothorax, I am unable and unwilling to form an opinion without surer grounds to go upon.

CASE XX.

Aneurism of the Aorta.

March 1823. Mr. S. ætat. 31, a very strong and healthy man, until within the last twelve months, during the whole of which time he has been suffering, more or less, from his present complaints, which, although varying much in degree, have continued the same in kind throughout. Within the last year, he has never been entirely free from the disease, but has had as many as eight or nine severe aggravations, or attacks, of it, with intervals of comparative ease. This affection seems to consist, simply, of a pain occupying the lower part of the left thoracic cavity, and confined to a space which may be described as a segment of the thoracic circle, comprehending the lateral portion, and coming as far forwards as within a few inches of the sternum, and reaching to within the same distance of the spine on the back; the heart may be considered as occupying the pectoral extremity of the pained segment. The pain is constant in some degree or other; in general, of a dull, *wearing*, gnawing character, but, occasionally (during what is called *the attacks*), growing *gradually* to be extreme, even excruciating, insomuch as entirely to prevent sleep for many successive nights. Even the habitual chronic pain, such as exists at present, is sufficient to prevent sleep. These severe aggravations of the habitual suffering, never came on or go off suddenly; and once only, about a few weeks since, has he had a sharp instantaneous plunge of pain, in the region of the heart, shooting to the back and down the arm. He never has had any degree of dyspnœa, even on using exercise; and it is only recently that he has had any (and this very slight) cough. He is obliged to lie with his head slightly elevated; and he has not been able to lie on

his *right* side since the first invasion of the disease ;—when he attempts to do so, he is oppressed with a sensation of a heavy weight gravitating from the site of the pain towards the right side. When he does sleep, his rest is very sound, and he is not at all troubled with dreams or sudden awakenings. He is not at all subject to *palpitation*, properly so called, but finds that any thing that *frets* or *hurries* him, decidedly augments the pain, and produces a sensation of fluttering of the heart. Common walking, however, or going up stairs, or indeed any degree of ordinary exertion, does not augment his sufferings ; neither does a deep inspiration or cough. There does not seem to be any unusual fulness in the epigastric or hypochondriac regions, nor does pressure on these give any pain, except in one small spot, near the ensiform cartilage. The side, over the seat of the pain, is not at all tender on external pressure. A full meal does not occasion any augmentation of the pain. He does not appear to have, at any time, laboured under *indigestion*, nor does he do so now ;—further, than that his bowels have been costive through the whole of his disease,* and his urine has always shown a copious pinky sediment, during the periods of aggravation of his pains. He has not, at any time, perceived any diminution in the urinary excretion ; but he has occasionally observed that his stools were of a very dark colour. He is of opinion that he has not at any time had *fever*, as he never has felt any unusual degree of heat, even in his hands and feet, nor has he been particularly thirsty. He has never had any headache, or disagreeable taste, except from medicine. He has lost a good deal of flesh, yet he is by no means emaciated, and still retains a pretty good complexion. He has tried many remedies,—with little benefit. He has been bled many times,—once with instantaneous relief ;

* He has taken a good deal of opium.

several times without any perceptible advantage. The blood is said to have been sometimes buffy, and sometimes natural. He has sometimes derived benefit from warm applications over the pained part. He has of late been taking as much as a dram of laudanum, without any resulting ease or sleep. The skin is at present soft and cool. Pulse 84, of natural strength and regular, perhaps with a very slight degree of hardness in it. This patient is very low spirited.

The Stethoscope, imperfectly applied, gives the following results: Sound of respiration audible, but low, over all the *right* side, before and behind,—hardly perceptible in many points, except on a deep or quick inspiration; much more audible over all the *left* side, and on the superior portion of the chest, nearly *puerile*:—in the middle of the back, the difference of intensity of the respiratory sound is very remarkable. There is no *rattle*. The *sphere* of respiration appears sufficiently great, only that on the lower part of the left side anteriorly, the sound of the *heart's* action prevents it being readily ascertained, whether it is present there or not. *Impulse* of the heart perhaps somewhat more than natural in the cardiac region, and very perceptible as low down as the edge of the short ribs on the left side. *Sound* also, perhaps rather louder than natural in the same place; very distinct over the left side anteriorly; slight on the right side anteriorly, and very slight (yet still audible, more especially with the open Stethoscope) on the back, on both sides. Rythm natural; as is also the character of the sound.

Considering the pectoral affection, whatever might be its precise site or nature, to be, at least, complicated with an inflammatory state, if not consisting essentially in this; and finding also that the bowels were irregular, I prescribed low diet, V. S. ad unc. xij, and gentle aperients with mercurials. The blood being inflamed and the stools of a very

white colour, both the V. S. and mercurial alteratives and saline aperients, were continued. The blood was still inflamed. These evacuations certainly relieved him very considerably, as he slept much better for some time without soporifics than he had done for a considerable period before, even with strong opiates. On the 3rd, it is remarked that the pulse has risen to 96, and is much smaller, and harder. Leeches were applied to the side, and slight mercurial aperients continued. 9th—Has slept much better, and can lie on the *right* side; tongue clean; bowels regular; appetite good. P. 96, soft and small. Has had some darting pains in the cardiac region. 12th—Pain of side incessant the last three days,—rather a continuous gnawing pain, than acute or paroxysmal,—sufficient, however, nearly altogether to prevent sleep. P. 96, small and soft. Skin cool. Complains of being very weak. Does not keep his bed. Feels some respite of pain by elevating his left arm, and as it were *hanging* from it, as it is rested on the chimney-piece above him. [Vesicator.—Haust: Opiat:]

I attended this patient until the 5th of April, when I took my leave. During this period he was bled twice, and took calomel and opium for two or three weeks. I left him considerably easier, but by no means freed from his sufferings.

I was very doubtful of the nature of this affection; the only record I find in my case-book, of a diagnostic kind, is the following note, appended to one of my earlier reports:

“———If the disease be *inflammation* of the *heart* or its *membranes*, why such moderation and regularity of pulse? if of *pleura*, why no increase of pain on inspiration or percussion? * if either the one or other, why no increase of dys-

* In making this query, I appear to have forgotten how very frequently chronic pleurisy is unaccompanied by pain.

pnœa on lying down? Hydrothorax and Hydropericardium, are excluded by the severity of the pain, as well as the want of symptoms. The pulse,—the buffy blood,—the pain—prove the existence of inflammation: is this, then, idiopathic and seated in the pleura,—or is it the consequence of some accidental *growth* in the chest? This last alone appears to me sufficient to account for all the symptoms.”

[Although I made a note in my first report of this case, to investigate the cause of the difference of respiration between the two sides of the chest, I somehow or other, neglected to do so.]

Dec. 3. This man, I find, has been free from his complaints but a very short period, if at all, since I last saw him. The disease has continued to preserve the same character, but with greater violence than ever. For several months past, a protuberance has been observed near the angle of the left scapula, of an oblong figure, parallel with the spine, and about half an inch from it. There is a very distinct pulsation in it, both sensible to the touch and eye. The patient's wife says that she has *felt* a pulsation in this spot almost from the beginning of his illness, and she is quite sure that ever since the appearance of the tumour, the pulsation in it is *always* greater during a paroxysm of his pain. He is much emaciated but he has never had any febrile heat or hectic.

The case was now clear, viz. *Aneurism of the Aorta*; but I once more applied the Stethoscope, with the view of ascertaining the state of the respiration and circulation. The following is the report I took down at the time:

Respiration audible over the greatest part of the chest on both sides, before and behind,—very slight over all the back on the *right* side, yet every where perceptible; slight, also, over all the left back, yet, I think, perceptible in every place, even over the tumour: character of the respiration

natural, but slight, and without any rattle :—much more distinct and loud anteriorly and very distinct under the clavicle on both sides. The only place where it is not heard is in the immediate region of the heart, and below it to the edge of the short ribs ; yet it is audible on the side close to this spot. Impulse of the heart moderate in the cardiac region ; the rythm natural ; sound somewhat louder than natural ; audible over the anterior of both sides, only in a moderate degree. *Impulse* perceptible on the left back, over the whole extent of the tumour, for the space perhaps of four or five inches in length,—but the impulse is not great except on using great pressure with the instrument : the sound here, seems in some places *single*, in some places *double* like the heart. There is no doubt that respiration is perceptible over these points, but in a very slight degree.

April, 1824. The symptoms have continued with very little variation—the pain always present, always great, but occasionally excruciating. The tumour has increased progressively, and is now very large, projecting abruptly from the back like an ostrich's egg. It is quite evident that the ribs and lower angle of the scapula have been absorbed in the place now occupied by this swelling ; the pulsation of which is now very distinct, and synchronous with the arterial pulse at the wrist. For some months past, this poor man has been obliged to take extremely large doses of opium, to render his sufferings bearable. The emaciation and debility are now very great.

The Stethoscope applied to the tumour gives no sound, but a very distinct impulse, which is most clearly *single*, and entirely different from the double shock communicated by the heart, as explored in the cardiac region. He died suddenly on the morning of the 13th.

DISSECTION. On laying open the chest the only sign of disease that presented, was the adhesion of both lungs to the pleura. The heart and pericardium were both sound, the former of natural size and consistence. On attempting to separate the left lung from the side of the chest, it was found that the whole back portion of the thorax was filled by a firm tumour, and that the lung lay over this, in front, compressed into a thin layer of an inch, or two inches, in thickness. This tumour proved to be the aneurismal sac, which, on being laid open, was found to be of an immense size. It was filled with the usual layers of lymph, and black coagula. The aneurismal orifice was in the descending aorta, on its spinal aspect, rather towards the left side, and about an inch and a half below the arch: it was quite circular, with a very smooth rounded edge, and of a larger diameter than the aorta at that point. The aorta was of its natural size every where, and exhibited no other marks of disease except a few scaly points of bone in the vicinity of the aneurismal orifice. The aneurismal sac extended, across the spine, to the lateral parts of the chest on both sides, but reached considerably further outwards on the left, than on the right side. Its longitudinal extent may be estimated at six or seven inches. Besides the displacement and compression of the lungs already mentioned, it was found that five or six of the bodies of the dorsal vertebræ were destroyed to a considerable depth, and two or three to such an extent as to admit the point of a finger to touch the spinal sheath. The ribs attached to these vertebræ were corroded to a considerable depth on the right side; and on the left, they were entirely absorbed in an extent of several inches, so as readily to permit the whole hand to be passed into the tumour on the back.

The œsophagus and trachea seemed quite unaffected by the aneurism.

REMARKS.

We have the authority of the inventor of the Stethoscope himself for believing, that this instrument will be found only of very doubtful utility in improving our diagnosis of Aneurisms of the descending Aorta (tom. II. p. 438). The present case is, perhaps, an additional instance of the correctness of this opinion: at least, it is certain, that my knowledge of the nature of this man's disease was not at all forwarded by the use of the cylinder. At first, indeed, I was disposed to think that the results of my two explorations were even *inconsistent* with the state of parts found on dissection: but further reflexion has convinced me of the incorrectness of this opinion. In my first examination in April, 1823, it is stated that the sound of respiration on the *right* side, although every where perceptible, is still very low, and even indistinct comparatively with that of the *left* side;—and that this difference is most remarkable on the back. At the time of this examination, I certainly was led to consider the comparatively indistinct respiration of the right side as *morbid*, and the very distinct respiration (approaching to puerile in some places) of the left side, as *natural*, or, at least, as resulting from the obstructed state of the *right* lung. This explanation was certainly entirely erroneous; as I think there can now be no doubt, that the moderate sound on the right side was natural, and the augmented intensity of sound on the left side morbid, and produced by the partial compression of the lung of that side by the aneurismal tumour. The perception of the respiratory sound over all the left side of the chest, before and behind, is readily explained by the aneurismal tumour, at that time, occupying principally the centre of the chest, and having the lungs as it were spread over it, both before and behind.

At the second examination in December (four months before the patient's death), when the tumour had begun to

make its appearance externally on the left back, the respiration is stated to be very slight over all the back, especially on the left side, but much more distinct over all the anterior parts of the chest: this statement accords very well with the augmentation of the aneurismal tumour on the posterior parts of the chest; although I am still surprised, as I was at the time of the exploration, that the sound of respiration should have been perceived, *in any degree*, immediately over the aneurismal tumour behind. My conviction of the fact is recorded in the report, written at the time: I do not well see how I could have been mistaken; yet I feel it very difficult to admit its correctness.

The exploration of the heart is throughout very consistent with the morbid state of the organs: the existence of the *arterial* or *single* shock after the tumour had pierced the parietes of the chest, is characteristic and satisfactory. (See Laennec, *loc. cit.*)

CASE XXI.

Symptomatic Hydrothorax.—Hypertrophia with Dilatation of the left Ventricle.—Slight (recent) Pleurisy.

Chichester Dispensary, 1824. Jane Groves, ætat. 60. This woman was first admitted in April 1823, being then affected with cough and dyspnœa; the former of several months' duration, the latter only present, at least in any considerable degree, for a few weeks. There was no deficiency of urine at this time, nor any œdema. The cough, however, was at times extremely severe, although unattended by pain; and the dyspnœa, at one time, suffered a great aggravation daily about three o'clock in the morning. There was difficulty of lying with the head low; but the difficulty seemed to arise rather from the aggravation of the cough than of the dyspnœa, by this position. Under the use of blisters to the chest, squills and opium, she got much bet-

ter, and was discharged in the beginning of June. She was re-admitted in November, labouring under the same complaints in a severer form. For some time these retained more of the character of inflammatory irritation and of cardiac mischief, than of hydrothorax; but for several months before her death, the symptoms of this latter affection were predominant, and very conspicuous, in conjunction with those of disease of the heart. The habitual dyspnœa was great; and also the cough, at times; she could not lie down at all in bed, without the support of a bed-chair: the urine was very scanty and sedimentous; the pulse very quick and irregular; the lips blue; the whole surface leucophlegmatic, and the legs œdematous.

On the 11th February, the *Stethoscope* was, for the first and only time, applied to the anterior and lateral parts of the chest, as she lay in a semi-recumbent posture. The following are the results obtained: *Respiration* puerile over the upper part of the left side anteriorly, as low as the middle of the mamma; audible, in a slight degree, below this, anteriorly, and also considerably lower on the side, but rather by means of a very slight *rattle* during inspiration than by the regular and natural hiss of the breath (it is not perceptible during expiration): in no point of the lower half of the chest, is the sound of respiration one-sixth part so loud or distinct as over the upper half. On the right side the respiration is puerile, but in a less degree, below the sternal end of the clavicle, and is slightly audible as low as the nipple, but not at all perceptible below this anteriorly, or laterally. There is no *rattle* on the superior parts of the left side; but there is a considerable mucous rattle, frequently obstructing the respiration, in different points of the right side. [The patient expectorates a considerable quantity of mucus.] The *circulation* was not properly, indeed hardly at all, explored. It was, however, noted that the *sound* of

the heart was not perceptible (with the *open* stethoscope, which only was used) at any distance beyond the cardiac region, and that the rythm was very irregular.

Percussion was applied only along the sternum; and it was found that the sound was decidedly, and very considerably, duller, over the lower third of this bone.

DIAGNOSIS. *Hydrothorax of both sides (symptomatic of diseased heart ?).—Peripneumonic engorgement of the lower left lobe?*

Under the use of Digitalis, Squills, and other diuretics, which, after different trials, at length succeeded in augmenting the flow of urine, this woman was very considerably relieved, and remained comparatively easy in her breath, &c. for three or four weeks. In the month of April her former bad symptoms all returned. The same means were again resorted to, and again with obvious, but with much less benefit than before. She, however, seemed as well as she had been for some time, during the first weeks of May, only that the anasarcaous state of the limbs was increased. She sat up daily. In this state she was suddenly seized on the 15th May, with insensibility and stupor, and died about six and thirty hours after. The body was examined, on the following day, in my presence, by Messrs. Philpot and Tully.

DISSECTION. On opening the chest, the lungs were seen to descend only as low as the third rib on the right, and the fourth rib on the left side, the inferior lobes being entirely compressed upwards, within that space, by water, which filled the remainder of the cavity of the chest on both sides. The pleura on the right side was inflamed over the whole space which contained the water (viz. where it invested the contiguous surfaces of the diaphragm, pericardium, lungs, and ribs), being uniformly red, and covered with a thin layer of adventitious membrane, from different points of

which many very fine threads of lymph extended across the space occupied by the effused serum. This inflammation had every appearance of being recent. On the left side the pleura exhibited no marks of inflammation. The lungs were perfectly sound on both sides, except that they were compressed as already mentioned, and that the lower part of the left lung, where it adhered to the pericardium, was slightly hepaticized. The pericardium was not inflamed, except in the part of its pleural covering already mentioned: it contained only a small quantity of water. The heart was very considerably enlarged, being full one-half, probably two-thirds, above the natural size: it retained its natural shape, except that its apex was blunter than that of the sound viscus. Before the ventricles were laid open the right felt flabby and the left firm. The cavity of the right was hardly, if any thing, larger than that of a moderate-sized heart,—certainly very small for one of the size of this; the parietes were flabby, so as to collapse on being cut, yet sufficiently firm to resist compression between the finger and thumb:—they were about one-third of an inch thick. The cavity of the left ventricle was nearly as large again as the right, the parietes being very solid and firm, and twice as thick as those of the right side at the apex, and three or four times as thick at the base. All the orifices were of the natural size, and all the valves sound, except that there were a very few minute points of ossification in the body (not reaching the border) of the membranous part of the mitral. There was no disease of the aorta. The liver was large, but sound, and much gorged with blood.

REMARKS.

It will be admitted that the results of the single exploration, in the foregoing case, were singularly congruous, as far as they went, with the appearances found on dissection. The effused serum had displaced the lungs on both

sides from the space over which the cylinder indicated the absence of respiration ; while the respiration was found to be *puerile* over the whole space occupied by the lungs. No conclusion can be drawn respecting the state of the heart, from the trifling notice taken of the manifestation of the actions of this organ. Indeed, the exploration was altogether confined to the state of the respiration, being made solely with the view of testing the accuracy of the common symptoms of Hydrothorax. It is, however, worthy of remark, that the enlargement of the heart was satisfactorily indicated by *Percussion*, from the preternatural sound observed over the lower part of the sternum.

CASE XXII.

Symptomatic Hydrothorax.

May 2nd, 1823. Mr. G.* *ætat.* 43, a gentleman who had formerly lived in the W. Indies, and had been long considered as a sufferer from slight Liver disorder. Had never been subject to chest complaints till last November, when he was attacked, rather suddenly, with a paroxysm of a violent affection referable to the chest, and which he describes very badly. There was no pain, but extreme oppression of the chest and dyspnœa, and dread and horror of impending suffocation, and palpitation of the heart ; but without any affection of the arms, as in angina. He has since had a good many similar attacks (perhaps a dozen in all), generally coming on at night. These paroxysms have not been brought on at any time by walking, or other bodily exertion. Since the period of the first attack (or before) his pulse has been extremely irregular, and there has been slight dyspnœa, especially on going up stairs, or up hill ; but this last symptom does not appear to have been very particularly remarked, either by the patient or his friends. He has never been well—although without any very defi-

* A Patient of Mr. Whicher, of Petersfield.

nite complaints—in the intervals of the paroxysms, and has looked very sallow and with an anxious countenance. A fortnight since, however, he was able to ride to Chichester (a distance of 20 miles), with hardly any inconvenience from dyspnœa; but he has been much worse during the last eight days. Within this period he has had one very severe paroxysm, which can hardly now be said to have gone quite off, as he has continued ever since to suffer from a vast increase of the habitual oppression on the chest, and, at times, complete incapacity to assume the horizontal posture, with extreme mental anxiety, and incessant dread of suffocation and death. Within the last week, also, the lower extremities have become œdematous, and the urine has been scanty and high-coloured, with a pinky sediment. He has little or no sleep, but he can, at times, contrive to lie down in bed, provided he does so very *gradually*. His easiest posture, however, is that of sitting and leaning forwards. This man has, I think, the most anxious countenance I ever saw. The eyes are bilious and the countenance sallow. The abdomen is somewhat swollen, and the præcordia prominent and hard, as if from enlarged liver. The pulse is extremely irregular, and feeble, so as not to be numbered. Tongue coated.

STETHOSCOPE. Action of the heart seems moderate in respect of *impulse* and sound, but extremely irregular: there appears to be a great number of imperfect contractions of the ventricles, followed, at long intervals, by one that is pretty full and strong. The sound of the heart's contractions is very audible under the xiphoid, and, in a slight degree, along the lower half of the right side. It is little perceptible under either clavicle, and not at all on the back. There is nothing unusual or unnatural in the character of the *sound*, independently of the *rythm*. *Respiration* is *extremely puerile* wherever it is heard, viz. over all the supe-

rior parts of both sides anteriorly (the patient being in the sitting posture); not audible below the nipple on either side (anteriorly), especially the *right*; it is also puerile on the back, even in the lower parts, when the patient leans forward, and, while in this posture, the sound of respiration can be distinguished lower on the axillary face of the right side, than when the body is kept erect. There is no rattle.

DIAGNOSIS. *Hydrothorax; perhaps also Hydropericardium; enlarged Liver.*

I prescribed V.S. ad unc. x. vel. xij. (with the view of procuring temporary relief), a blister to the region of the heart, a pill consisting of three grains of blue pill and half a grain of Pulv: Digital: every night at bed time, and half an ounce of the Infusion of Digitalis every sixth hour.

The benefit obtained by these means was very speedy, and most striking. The bleeding gave instantaneous relief, which was further increased by the speedy and full operation of the blister; and this relief was carried to a state of almost complete ease before the end of the second day, by the powerful influence of the Digitalis on the secretion of urine. This action was steadily kept up for some time, with the very best effects, and I was not a little gratified on receiving a visit from this patient at my own house, a few weeks after.

Dec. 1st. This patient has had one or two slight returns of his complaint and has been always relieved, and in a very short time, by the Digitalis. The pulse, however, still continues irregular.

REMARKS.

Perhaps there could have existed very little doubt of the presence of water in the chest in this case, in the mind of any experienced practitioner: its positive existence, however, was clearly ascertained by the Stethoscope. In addition to the pathognomonic sign of the abolition of respiration over a certain height on the chest,—which height varies ac-

according to the position of the individual,—the *extremely puerile* respiration over the superior parts of the chest, would have been almost sufficient, in my mind, to indicate the same morbid condition. As the exploration of the circulation indicated nothing further than irregularity of action of the heart, and as this may exist without any organic lesion, it does not appear certain whether or not the Hydrothorax, in this case, was dependent on structural disease of the circulatory organ. The exploration of the chest, *after* the evacuation of the water, would, I conceive, have pretty certainly settled this point; but I had not an opportunity of doing so. This point is, however, one of extreme importance, inasmuch as, if the Hydrothorax was the primary disease, there appears no substantial reason for despairing of ultimate recovery, which is an event not to be looked for in the contrary case.

May, 1824. This gentleman still continues in tolerable health, but is by no means entirely free from his disease.

CASE XXIII.

Symptomatic Hydrothorax.—Diseased Heart.

June 15, 1823. M. T. ætat. 50.* Has been affected upwards of twelve months with an almost constant sense of violent action of the heart,—so great occasionally, he says, as to make the bed shake under him,—with dyspnœa on coming up stairs, but without any particular aggravation of his symptoms by common exercise, or on assuming the horizontal posture. The sleep has also been, in general, sound, and repose equally good in the usual posture, and with the head low. He had also suffered from *bilious* symptoms. Ten days ago he was attacked, rather suddenly, with his present symptoms, viz:—very considerable dyspnœa,

* A patient of Mr. Whicher, of Petworth.

much aggravated by recumbency,—a great impediment to taking a deep inspiration,—disappearance of the wonted pulsation in the cardiac region,—fullness and tenderness of the præcordia,—scanty and very high-coloured urine with a copious pinky sediment,—and much flatulence. The pulse is from 120 to 140, very irregular, but of considerable strength. There is hardly any heat of skin, and the tongue is pretty clean. The bowels are regular; and he remarks that whatever tends to distend the stomach, such as flatulence, and the taking of any kind of food, greatly aggravates his distress.

The Stethoscope, cursorily applied, detects little or no *impulse* in the region of the heart, and only a moderate degree of sound,—the heart sounding as if deep in the chest,—and no interval of repose observable between the systole of the auricles and ventricles. Sound of the heart, however, *extremely loud* along the upper half of the sternum, and under both clavicles, especially the right, and with a somewhat *thrilling* quality—perhaps not sufficient to indicate valvular disease, yet rather different from the sound of simple dilatation. Sound audible over all the right side anteriorly, and also on both sides of the back, but not very loud. *Respiration* very imperfectly explored, yet enough to prove it to be *highly puerile* over the upper parts of both sides of the chest, before and behind,—most so, under the right clavicle; and nearly, if not altogether inaudible, below the nipple.

DIAGNOSIS. Dilatation of the Heart, with disease of the valves, or Aorta, or both, now conjoined with Hydropericardium, and Hydrothorax, probably inflammatory.

I prescribed nearly as in the preceding case, [viz. V. S. ad unc. xvi, Vesicator. et Infus: Digitalis,] and with the same happy result eventually, but not so speedily.

In July I learned from this gentleman's Surgeon that

he was free from all complaint, but what he had laboured under previously to this attack; and in October I was told that he was well enough to go out shooting.

May 1824. M. T. still continues *tolerably* well.

REMARKS.

The same remarks as in the last case are equally applicable here. In this case, however, I think there are more decided marks of diseased Heart. The Prognosis, therefore, must be worse.

CASE XXIV.

Hydrothorax of the left side.

Chichester Dispensary, Feb. 26, 1824. John Luffe, ætat. 66, ex-coachman, affected a year and a half with dyspnœa, greatly increased by motion of any kind,—also with a frequent cough attended with a good deal of expectoration. During the last two months his lower extremities have been œdematous, and he is now considerably anasarcaous over the whole body. Since the appearance of the œdema, the urine has been very scanty and sedimentous. He is now in bed, and lies with his head *quite low*, in which posture he says he is most easy. He says that he generally lies on the right side, but thinks the preference is more from habit than from any necessity, or on account of superior comfort; as he is of opinion that his breathing is as easy while lying on the other side. He sleeps soundly, undisturbed by frightful dreams, or sudden startings from his rest. The pulse is very irregular, full and oppressed, with an occasional beat barely perceptible. He has no pain.

The Stethoscope gives *puerile* respiration over all the right side, but detects no respiration whatever on the left side, before and behind. *Percussion* gives similar results, eliciting a distinct clear sound from the right side, and a dull fleshy sound from the left. Action of the heart not examined.

DIAGNOSIS. *Hydrothorax of the left side.*

PROGNOSIS. *Speedy death.*

This man had been under treatment for a week or two before the date of the above report, and had taken Digitalis and Squills, without any increase of the urinary secretion, or relief of his symptoms. At the time of the examination, the head was beginning to be affected. He died rather suddenly, only four days after.

The body was not allowed to be examined after death; but, after much intreaty, permission was granted to *tap* the chest. A lancet was, accordingly, passed into the thorax, through one of the intercostal spaces of the *left* back, about two inches from the spine, and under the lower angle of the scapula. A stream of limpid serum immediately issued from the puncture and continued to flow until three or four pints were discharged. This fluid partially coagulated on the application of heat. Punctures were made into the *right* back, in different points, both above and below the place of the incision on the left side, but not a drop of fluid of any kind was discharged.

REMARKS.

It is unnecessary to point out the perfect accordance, in the above case, of the Diagnosis deduced from Auscultation, and the pathological state,—as far as the one was prosecuted during life, or the other investigated after death. I do not mean to say that the accuracy of Diagnosis thus attained, was of any practical use, at the time it was established; although I am certainly of opinion that the same precise knowledge of the disease at an earlier period, might have been so, by suggesting a more decisive and better-directed treatment. As there is every reason for believing that the Hydrothorax was here merely symptomatic of some organic affection, it is probable that the removal of the water would have been, at most, only a very temporary bene-

fit ; still, I think, no scientific or rational practitioner will deny that it would, at least, have been highly satisfactory to know the exact nature of the disease, as well as its site, and extent. Now, I think, I may safely assert that, without the aid of the Stethoscope or Percussion, it was hardly possible, from the *common symptoms*, to acquire this precise knowledge. Hydrothorax might, indeed, have been not only suspected, but believed to exist,—with as much confidence as one can give to such fallacious evidence ; but I imagine no person, without the aid of Auscultation, would have ventured to pronounce that the one side was full of water, and the other not containing any. It will be observed that the common signs drawn from the facility and comfort of assuming particular postures, were here either entirely wanting, or the reverse of those generally received.

CASE XXV.

(Supposed) Idiopathic Hydrothorax.

August 16, 1823. Mr. A.* ætat. 37. This gentleman, a person of the most temperate and regular habits, had been always troubled with delicate digestion, and frequently requiring medicine for dyspepsia and irregularity of the bowels. Last spring, he had what was considered by his Surgeon, a very competent judge, an affection of the trachæa, marked chiefly by loss of voice and pain about the larynx, but without any dyspnœa. He had never been affected with pain in the chest, or dyspnœa, before the present attack. This came on about ten days since, in London, whither he had gone on business. For a day or two he experienced slight pains shooting through his chest, accompanied, at first, with scarcely any dyspnœa, but, shortly, altogether superseded by this. From its first appearance the

* A patient of Mr. Hollingdale, of Midhurst.

dyspnœa has been regularly progressive to the present time. When first experienced, it did not affect him while riding—but it soon came to do so; then he could walk on level ground, out of doors,—but this speedily became too much for him; after this, for a short time, he could walk about his room,—but within the last few days he has not been able to endure the slightest movement of any kind, without suffering a paroxysm of most oppressive dyspnœa. There is, indeed, constant dyspnœa in a considerable degree, and a great sense of oppression on the chest;—but both these symptoms are immensely aggravated, as already said, by motion. He has not been able to lie down in bed, for a week, and now *sits* in bed with his trunk nearly erect. He leans backward, a position, which is much easier to him than leaning to either side. He has no pain in the chest, and scarcely any cough; neither is there (nor has there been) any heat of skin. He has slept but very little for some days. His countenance is very pallid, with a tinge of blueness, and very anxious. The pulse is now about 100, regular, and soft. He is constantly sensible of an unnatural action of his heart; and, from the beginning of his illness, his wife has remarked a constant tremulous motion of his shirt, answering to the beat of the pulse. Both these circumstances are now present, yet the hand laid on the cardiac region receives no impulse from the heart. The tongue is dry but not foul; the bowels have been easily kept regular by medicine. There is great nausea and retching, the stomach rejecting almost every thing that is swallowed. The urine is made in the natural quantity but depositing when cold, a most copious sediment of a milk-white substance. This sediment is in quantity rather greater than the proper urine, which floats above it, clear and of natural colour, and uncoagulable by heat. The sediment is clearly a proper urinary sediment, and not a se-

cretion from the bladder. No œdema of the legs or any other part of the body.

The Stethoscope applied to the anterior parts of the chest, gives the following results: *Respiration* very distinct and very loud (puerile) over all the *right* side, and strongly puerile under the clavicle, without any rattle; *inaudible* over all the *left* side, except immediately under the clavicle, where it is perceptible in a slight degree. No *impulse* whatever from the heart; *sound* in the cardiac region dull, and as if distant from the parietes of the chest, perceptible, in a moderate degree, over all the right and left side: rhythm natural, and no foreign sound perceptible. Back not explored. Hægophonism not sought for.

Considering this as a case of Hydrothorax, I wished to give a fair trial to *Digitalis*, but was prevented employing the only preparation in which I have much faith (the infusion) by the constant nausea. I prescribed the powder in the form of a pill (gr. j. ter quotidie) with *one* draught containing dr. vj. of the infusion, combined with aromatics and a little laudanum;—a blister to the chest, and one (exploratory) bleeding of 11 or 12 oz. The draught was immediately rejected, but the pill retained. This latter, therefore, with an increased quantity of the *digitalis* and a little blue pill, was continued for some days, but with scarcely any effect on the urine, the system, or the symptoms. The blood drawn was not buffy, and scarcely any relief was derived from its loss. The sense of exhaustion and faintness having been much increased, and the pulse having become quicker, without any increase of the urinary secretion, the *digitalis* was omitted, and other diuretics and means had recourse to, but without any effect, in relieving the symptoms, or changing in any material degree, the state of the urine. In my report of the case on the 20th, it is stated that *Percussion* under the clavicles gives a *clear* sound on the right,

and a *very dull* one on the left side. On the 22nd, it is mentioned that the *Stethoscope* gives the same results as before, respecting the respiration, but that now the sound of the heart is heard very indistinctly on the left side, and distinctly on the right. At this time I considered the patient as moribund, but prescribed some draughts containing nitrous æther and vin. colch. He could now only lie in a nearly erect posture, inclining to the left side. After this time the urine became somewhat increased in quantity, and the proportion of sediment less, the pulse still continued quite regular, and although after a few days, he could lie flatter (still inclining to the left side), and the urine was considerably increased in quantity, and the sediment greatly diminished, the oppression of the chest did not seem at all relieved, and he died in the course of a very few days. I was extremely disappointed in not being permitted to examine the body after death.

REMARKS.

The above is one of the clearest examples of Hydrothorax that I have ever met with ; and one which I am disposed to look upon as Idiopathic, and (therefore) as a very rare disease. Although there were certainly many reasons for inferring the presence of water in the chest, in this case, from the general symptoms ; yet I hope I am not throwing any undue discredit on the common means of diagnosis, when I give it as my opinion, that the *precise nature* and *extent* of the disease could not have been ascertained by the general symptoms only. Both these important points were immediately ascertained by the stethoscope ; and if this knowledge was productive of no benefit in the treatment, this cannot be considered as any defect in that instrument. On the contrary, I have a strong conviction (alas too late !) that that instrument *did* point out most clearly a means of treatment, which, if adopted, might have afforded some prospect

of saving the patient's most valuable life—I mean *Paracentesis of the Thorax*. I am so well convinced of this, that, if it is ever my fate to encounter a case similar to the above, I am resolved to propose this measure, on the failure of the usual means of unloading the chest. And I may here remark, that it is only in such a case as the above, that this operation seems at all likely to prove beneficial. In Hydrothorax depending on visceral disease, the benefit can, at best, be only temporary, while the risk is considerable. In Empyema from chronic pleurisy, the existence of adhesions, compressing and binding down the lung, will not only render the operation nugatory, but remove almost the only chance left of recovery. But in such a case as the present, where the effusion was, in all probability, pure serum, uncomplicated with any organic disease, or any very considerable degree of inflammation in the pleura,—where it was of so recent occurrence, and existing in such great quantity,—I think there was every reason for anticipating a happy result from the operation. Its performance was, at all events, in my opinion, sufficiently justifiable, from the obvious hopelessness of relief by other means, and from the degree of probability of benefit which it held out.

In admitting the propriety of the operation in such cases, it is obvious that the Stethoscope becomes of the utmost value in pointing out the place of incision. In the present case, indeed, I think *Percussion* would have answered nearly the same purpose; but without one or other of these means, I have no hesitation in saying that, in making the incision, the operator might have been equally justified in thrusting his trocar into the right side where there probably did not exist one drop of fluid, as into the left which was full of it!

I cannot say more than this in favour of Auscultation.

In stating the above case to have been one of Idiopa-

thic Hydrothorax, I am by no means disposed to deny the probable coexistence of a certain degree of inflammation of the pleura, with the effused serum. I should not, however, consider the kind or extent of the inflammation that, in all probability, existed here, as furnishing any substantial objection to the operation above suggested.

CASE XXVI.

Anasarca of the Lungs.—Hydrothorax.

Chichester Dispensary, August 2, 1822. Henry Diggece, ætat. 39, was admitted this day affected with symptoms of general Dropsy, obviously of the limbs and abdomen, and with symptoms indicating its presence in the chest,—such as dyspnœa, starting from sleep, uneasiness on lying on the side, &c. At a later period of his disease, he had for a considerable time very severe cough, at intervals, with increase of the dyspnœa. In October, he suffered from extremely severe headache, succeeded by insensibility and convulsions of some duration, and on the first of November he was considered moribund. He however recovered from this, and lingered in a very miserable state till the end of January. As this case was one purely of dropsy, it is unnecessary to notice in this place, either the general history of the disease or its treatment.

I have given above all the principal symptoms referable to disease in the chest. More with the view of testing the fidelity of the instrument, than in hopes of deriving any useful information in this particular case, I applied the Stethoscope to the anterior parts of the chest once, on the 9th of January 1823. He was at this time sitting up, although in a condition perfectly hopeless. There was a moderate degree of dyspnœa. The following is the note of this imperfect exploration inserted in my pocket book under the above date:—Sound of the Heart's action very loud over all the left side of the chest before, and also over the greater

part of the right; *impulse* moderate in the cardiac region; *rythm* natural. *Respiration* every where indistinct, and not at all audible on the right side below the nipple (meaning, over that part of the side below the level of the nipple); but over this space there is heard a slight peculiar sound during expiration. Above the nipple on this side, as elsewhere, the sound of respiration is less than natural.

This man died on the last day of January, and the body was examined the day after.

DISSECTION. I shall only notice in this place, the state of the thoracic viscera. There was no mark of previous inflammation in any part of the chest,—no induration—no adhesions. The right cavity of the pleura contained a pint and half of serum, and there was a small quantity in the left, and also in the pericardium. The texture of the lungs was of natural consistence throughout, except that they were anasarcaous in every point, and contained a very considerable quantity of serum. They also contained several bony concretions, and were mottled over their whole surface with black patches. The heart was of the ordinary size, but the parietes of the left ventricle were somewhat thinner, and those of the right thicker than natural. The valves and outlets were all sound.

REMARKS.

The condition of the lungs in the above case was clearly that of oedema or anasarca of this viscus. In the diagnosis of this affection it is confessed by Laennec himself (Tom. II. p. 14.) that the Stethoscope affords only partial assistance. The result of the exploration in the above case coincides with Laennec's statement, and is, therefore, so far satisfactory. The presence of water in the right cavity of the pleura, was indicated by the usual sign of the absense of respiration. It will be observed that the partial compression of the lung by the collection of water in the chest in this

case, did not, as it usually does, produce *puerile* respiration in other parts of the lungs:—was this owing to the universally anasarcaous condition of these bodies? Might it not be inferred in a similar case, where the presence of a considerable portion of water in the cavity of the chest is detected by the Stethoscope, and where, nevertheless, *puerile* respiration is wanting, that anasarca of the lungs existed? I fear this will not always be a faithful test (See the Case of Daniel, p. 112). At all events, I may say that this is the only instance I have met with where *puerile* respiration was absent when there existed considerable compression of the lungs. To be sure the quantity of water in the chest was not here very great.

The condition of the heart agreed very well with the results of the imperfect exploration.

CASE XXVII.

Hydrothorax.

Chichester Dispensary, August 15, 1823. Mary Hall, ætat. 44, Labourer's wife, a strong and healthy woman, until last winter, when she caught a severe cold during the very inclement weather, and while the catamenia were present. This discharge was immediately suppressed, and shortly afterwards she was seized with pain of chest, dyspnœa, &c. This affection of the chest has continued, with various changes from better to worse, up to the present time, but without obliging her to give up work, until within the last four or five weeks. She has suffered from palpitation or fluttering in the region of the heart, and also constant nausea and retching ever since her first attack. Along with these she now labours under constant dyspnœa, greatly increased by motion, and only a slight degree of pain in the chest. She has hardly any cough. Cannot lie with her head low, nor well upon the right side. She has had anasarca

of the lower limbs a week, but has not experienced any deficiency of urine. The abdomen is tumid ; bowels regular, tongue moist, and a disagreeable taste in the mouth. Pulse 90, regular and sharpish. The catamenia have not appeared since the first attack.

STETHOSCOPE. *Respiration* puerile under both clavicles. On the *right* side it disappears entirely, and abruptly, at the level of the fifth rib on the anterior and lateral parts ; it is audible lower than this on the back, but much less distinctly than above.

On the left side, the respiration is very distinct over all the back, and considerably louder along the spine. Except in the very axilla, and under the clavicle, it is inaudible over all the anterior and lateral parts of this side.

The Heart. No impulse in the region of the heart ; sound moderate and rythm natural in the same place : sound more perceptible under the sternum than in the region of the heart ; audible over all the right side anteriorly, but not on the back, on either side.

[Vesicator. pect : Pil. et Mist. Digitalis ter die.]

22nd. The blister relieved her breath very much, but she could not continue the digitalis, owing to sickness. She has had another blister. She can now lie with her head much lower. Pulse under 70, full and labouring. Very costive. [Laxant. et Enema.]

29th. The anasarca has increased, probably with benefit to the chest, as she can now lie with her head low, and quite as well on the right as on the left side, and her breath is better, she says, than it has been for six months. Urine still scanty. Pulse 80.

Respiration much less puerile under both clavicles ; not explored elsewhere. [Pil. ter quotidie ex Pulv. Digital: gr. ss. et Pil. Scill. c. gr. iij.]

The amendment in the state of the symptoms imme-

diately referable to the chest, was, in this poor woman's case, most fallacious. The anasarca gradually increased, uninfluenced by the Digitalis, which was therefore omitted, and the chest became once more greatly affected. She died rather suddenly at last.

Permission to examine the body could not be obtained.

REMARKS.

There seems little reason to doubt that the above was a case of Hydrothorax, although the most unequivocal test was not applied. I detail it principally with the view of pointing out how the Stethoscope, even when very imperfectly applied, may become a faithful index of the state of the pectoral organs. In my first examination of this case, in addition to the absence of the respiratory sound over the inferior parts of the chest, the respiration is stated to be (as it usually is in such cases) puerile under the clavicles. At the subsequent exploration of the 29th, when, from the general symptoms, there could hardly be any doubt of the diminution of the water in the chest, the cylinder discovered the respiration over the superior parts of the chest (where only it was applied) to be *much less puerile*, than it was formerly; thereby clearly indicating, by this simple change, that the effused fluid actually was lessened.

CASE XXVIII.

Chronic Pleurisy.—Dilatation of the Heart.

Dec. 16, 1822. Mr. J. S. ætat. 30, a professional gentleman: last Spring, complained repeatedly of having taken cold, had a short dry cough, and looked pale. In the beginning of summer he had a smart attack of what was considered, by a most competent judge, as pleurisy of the right side. This confined him to the house for a fortnight. I did not attend him in this attack. He got pretty well over

this illness, except that he continued to feel weak, and perspired much on taking exercise. After six weeks, he was again obliged to give up business. His principal symptoms at this time were debility, cough, dyspnœa, perspirations, and quick pulse. Having confined himself six weeks more, he again attempted to return to business, but was shortly laid up by a vesicular eruption on the legs, which he attributed to the irritation of worsted stockings. On the disappearance of this eruption, about the 20th of last month (Nov.) he once more went out (in an open carriage), and returned labouring under a fresh attack of inflammation in the right side of the chest. The usual symptoms of pleurisy were present, viz. pain of the part, dyspnœa, febrile pulse and skin, &c. The usual measures, viz. bleeding, blistering, &c. were a second time had recourse to, and with apparent benefit, as all the more urgent symptoms speedily disappeared. Since that time he has remained with very little dyspnœa, scarcely any cough, but with a pulse never under 100, and a continued incapacity of lying on the right side. In fact, there has been so little obvious affection of the chest since the first few days, that, to judge merely from the common symptoms, one would almost be disposed to doubt whether the disease has not rather been *Fever* than *Pleurisy* or *Peripneumony*. Yesterday I applied the *Stethoscope* for the first time. The sound of respiration was found to be unnaturally distinct (*puerile*) over all the left side of the chest, before and behind, and extremely indistinct, indeed scarcely perceptible, on the deepest inspiration, over the whole of the right. There was no *rattle*. Impulse and sound of the heart rather great in the region of the heart, and the sound very distinct over all the right side anteriorly.

DIAGNOSIS. *Pleurisy of the right side with copious effusion.*

I shall not detail the treatment of this case, at large,

but observe, once for all, in this place, that it consisted of general and local bleeding, blisters, and all the ordinary measures in use in this country in similar cases. The blood drawn was always highly buffed. During the greater part of the time his diet was very spare; and it is worthy of note that the digestive functions remained unaffected nearly through the whole disease.

March 5th, 1823. Has remained perfectly free from pain and cough, and complains little of dyspnœa except on motion. He has a good appetite; sleeps well, and with the head low. He perspires occasionally by night, but there is never any increased heat of skin. He is very pale, and the pulse is never under 100, and he suffers occasionally from palpitation.

STETHOSCOPE. Respiration still *puerile* over all the *left* side before and behind, except in the region of the heart, where it is entirely absent. It is now also perceptible over the whole of the *right* side before and behind, but the sound is *very slight indeed* compared with that of the left. It is less in the superior parts, immediately under the clavicle, than lower down, but is not at all audible a couple of inches below the nipple. On this side, the sound of respiration is not perceptible, as is usual, through the whole process of inspiration,—a considerable part of the expansion of the chest taking place without any. There is no rattle on either side. *Pectoriloquism* exists no where; but there is a very marked difference between the two sides while the patient is speaking; there being a loud clear and thrilling sound on the right, which is hardly at all perceptible in any part on the left side: still there is no *transmission* of sound by the stethoscope, but merely *resonance under it*. (Is this *Hægophonism*?) Percussion does not occasion the least uneasiness in any part, although performed with no feeble hand. It elicits a very dull sound over all the right side,

and a clear one over all the left, except in the region of the heart. Action and rythm of the *Heart* quite natural, only quick; impulse in the region of the heart, perhaps unnaturally great, and the sound very loud. Sound of the contractions very distinct over the whole of the chest anteriorly, and quite as distinctly on the right side as the left; perhaps more distinct under the lower half of the sternum, and between it and the right nipple, than in the very region of the heart;—not perceptible on the back (through the clothes).

April 7. Has continued much as before, and is now somewhat improved. Breath considerably better, the dyspnoea being hardly perceptible except on motion, and he can lie on either side indifferently. The pulse has come down to 80 or 90, and there is now no palpitation. Chest again examined by the Stethoscope and Percussion, and with nearly the same results. Respiration still highly puerile over all the left side, except in the cardiac region anteriorly; while it is even less perceptible over the right side than on the last trial, being heard only under the clavicle, and then in a very slight degree. It is not more audible *along the spine* on the right side, than on the rest of that side. *Percussion* gives precisely analogous results; the resonance being very loud and clear over all the left side, except in the cardiac region; and quite dull over all the right, especially on the lower parts of the chest; it is somewhat clearer under the clavicle. Impulse of the *Heart* in the cardiac region natural, sound louder than natural; but there is no other unusual character of sound or rythm. Sound very distinct over all the anterior of the chest, and quite as loud on the right side as on the left; hardly audible on the back.

June 21. Continuing better, as the fine weather came on, he again drove out in his carriage, and even did a

little professional business : He was however seized (three weeks since) with a fresh attack, apparently now of the *left* side, as the pain (not very great) was confined to that side, and he could not lie so comfortably on it as the other. The other chief symptoms were—increase of dyspnœa, occasional severe cough with little or no expectoration, and a quick pulse (120-130). The blood drawn was very buffy and cupped. He is now considerably better, being without pain and with hardly any cough ; but the breath continues very short, and the pulse (which has been always regular) is rarely under 120. He decidedly breathes best when erect, still he can, and generally does, lie with his head only very moderately elevated.

Stethoscope, slightly applied to the anterior parts of the chest, shows a considerable difference of result, from the last exploration.

Now, the respiration, in place of being *puerile*, on the left side, as before, is dull and obscure, as if the sound were more remote than usual. It is, however, perceptible wherever explored, but not always readily made out amid the loudness of the sound of the heart's contractions. In some places it is more distinct than others, but no where does it even approach its former condition of puerile. The *extent* of the sphere of respiration on this side I neglected to ascertain. On the *right side* the respiration is now more distinct than at any of the former trials, but is still very different from the healthy sound. It seems as if the puerile sound, in a slight degree, were heard, for an instant, deep in the chest, and then intirely lost, like the valve of a small bellows opened for an instant and then stopped. The sound is *very distinct*, though slight, and extends over the greater part of this side anteriorly. Over the upper part of the left side near the sternal end of the

clavicle, there is heard (through the *close* Stethoscope) a peculiar croaking sound during inspiration only. It does not seem to traverse the instrument. It is heard in no other part of the chest. The sound of the heart's contractions is very loud, and heard very distinctly over all the right side as well as the left. (During this examination the patient was either lying on the back, or sitting up.)

July 30. Has continued in the same state of chronic infirmity, with a moderate degree of continuous dyspnœa, greatly and instantaneously increased on motion, and with a pulse rarely under 120, but without the slightest degree of febrile heat, or hectic irritation; with no pain and hardly any cough. The sleep is, in general, tolerably good, although occasionally broken, yet never in alarm. He can lie on either side indifferently, and with the head low. The bowels, and all other functions except respiration, are in a natural state. He can hardly take any exercise on account of his breath. Pallor of countenance undiminished, and emaciation considerable. He has taken no medicines, but has had several blisters applied to the chest, and has lived entirely on vegetable food.

STETHOSCOPE. On the *left side*, the respiration is loud, nearly puerile, under the clavicle, gradually decreasing in intensity in descending, and entirely lost before reaching the nipple; indeed it is barely perceptible an inch above the nipple. On the sternal side of the cardiac region, however, it is distinctly audible (below this) and is there accompanied by a slight sibilous rattle. On the back, respiration is very audible, somewhat puerile about the middle. On the *right side*, the respiration is rather distinctly audible over the whole of the anterior and superior parts, and as low as four fingers' breadth below the nipple. In some parts it is puerile, or at least very distinct, especially just above the nipple, in which point it is louder than immediately under

the clavicle. It seems also louder on the lateral parts of the chest, than under the sternal ends of the ribs. It begins to be less distinct immediately below the nipple, and gradually decreases in going downwards. There is no rattle. Sound hardly audible on the back, indeed not audible through the clothes.

Heart. Impulse and sound in the cardiac region both considerable. On the left side the sound is every where very distinct, but much more distinct towards and under the sternum, than on the lateral parts anteriorly. The sound is indeed inconsiderable over the lateral parts of the chest, on this side, and is hardly perceptible on the back on either side. It is much louder under the clavicle. On the *right side*, the sound is every where perceptible on the anterior of the chest,—very loud as far as the nipple, louder indeed, than in any part of the left side, except in the very cardiac region : it is less loud under the clavicle. On both sides, and everywhere, the sound is heard much more distinctly with the *open Stethoscope*.

N. B. The above results were obtained while the patient was in the sitting posture ; and similar were derived from a slight exploration while recumbent. I neglected to seek for *Hægophonism*.

Sep. 27. Remained nearly in the same state, until three weeks since, when he had a fresh attack of inflammation of the chest, marked more by increase of dyspnoea, and the supervention of a very severe cough, than by pain or febrile heat. This has been the only time that the cough has been at all severe for any length of time, and that it has been attended by expectoration. The expectoration on the late attack was at first frothy and viscid, becoming gradually thick and yellow, precisely like that of a common catarrh. The expectoration has now disappeared,

but there is still a good deal of cough occasionally, and he has been much weakened by the attack and the treatment.

STETHOSCOPE. *Right side.* Respiration puerile under the clavicle, and as low as the nipple; below this it becomes very moderate, but is still audible a full hand's breadth lower. There is no rattle. *Left side.* Respiration sufficiently audible under the clavicle, audible, but in a less degree, as low as the nipple, and everywhere very much weaker than on the right side. It is somewhat interrupted (*entrecoupé*). It is by far most distinct and loudest in the point between the nipple and sternum. From the nipple downwards to the margin of the ribs, and laterally, respiration is not at all perceptible. The back was very imperfectly explored; but the sound of respiration appeared very slightly audible on both sides,—and least so on the right side. No pectoriloquism on either side; but Hægophonism under the left clavicle; at least the following results are obtained while the patient is speaking: On the lower parts of this side (the left) no difference of sound is perceptible under the instrument, but on the upper part, below the clavicles, there is a sort of distinct resonance of the voice under the Stethoscope, as if vibrating in a hollow space, yet not at all traversing the tube.

The Heart. Impulse of the heart natural in the region of the heart, but *felt* with the hand on the *right* side of the chest. Sound very loud over the whole anterior of the chest, especially the right side,—loudest near the sternum. No irregularity of rythm nor foreign sound during the contractions. Sound not audible on the back (with the open stethoscope.)

Oct. 21. Has remained very breathless and sleepless, getting gradually weaker, unable to bear the slightest motion without immense aggravation of the habitual dyspnœa, yet without any pain or uneasiness in the chest. The pulse

has continued equally frequent, but unaccompanied by any other sign of fever. There is a very inconsiderable cough without any expectoration. He can now lie with much greater ease on the *right* side.

STETHOSCOPE. Respiration as when last explored, on a very superficial trial. Much less distinct under the outer end of the right clavicle.

Heart. Sound, and perhaps impulse, greater than natural, certainly considerably so, when compared with the feebleness of the pulse; and quite as audible on the right side as left, or more so,—decidedly more audible under the right nipple, than on the outer side of the left chest, or indeed on any part of that side. No irregularity of rhythm or peculiarity of sound. *Percussion* elicits a dull sound in the cardiac region, where respiration is not at all perceptible.

From this time he got gradually weaker and more breathless, but without any cough or expectoration, and died on the 12th November. His legs became slightly anasarcaous a few weeks before his death, and he began to be much affected with flatulence and other symptoms of indigestion, but there was no irregularity of bowels nor decrease in the secretion of urine. A week before his death he was occasionally slightly delirious.

The body was examined the day after death, by Mr. Newland, Surgeon of this City, his assistant Mr. Young, and myself. On the preceding evening I drew up a brief note of the *Diagnosticks* afforded (in my opinion) by each successive exploration of the chest, as recorded in my case-books, and as transcribed above, together with what I considered as the most probable morbid appearances to be found by us in the chest. This note, which I read to the Gentlemen above mentioned, while in the room with the corpse, I shall here transcribe *verbatim*, previously to giving the account of the dissection.

“(J. S.)—DIAGNOSTICKS.—Dec. 1822. Pleurisy of right side, with copious effusion.

1823, March. Pleuritic effusion of right side still great, but diminished.

April 7th. Same results,—no increased absorption of fluid, but rather the contrary.

June 21st. Attack of Pleurisy of the left side, with considerable effusion, and compression of the lung, but less than on the right side; absorption of part of the fluid on the right chest.

July 30th. Considerable absorption of fluid on both sides, but still a good deal on the inferior parts of both: probably adhesion has taken place over the greater part of the *right side*, between the lungs and pleura costalis, except on the inferior lobe.

Sept. 27th. Has had a fresh attack of inflammation, —I think peripneumony, and also a fresh pleurisy of the left side:—Left lung thickened and partially hepatized. Absorption of fluid of right side goes on, and adhesion and development of upper lobes on right side encreased.

Oct. 20th. Much as before. Hepatization of the outer part of the right superior lobe?

POST MORTEM? Serous or sero-purulent effusion in both sides,—*most* on the left, but on the right *thickest*,—adhesion of the lungs to the pleura wherever there is no effusion—e. g. the greater part of the right lung, and the upper lobe of the left probably. *Carnification* (See Laennec) of both lungs in different parts and degrees:—hepatization of outer part of right superior lobe, and also of left ditto. False membranes and cheesy crusts on different parts of pleura. Some Tubercles?—*The Heart*. I am somewhat at a loss how to state my *expectations* respecting the state of this organ. There is no *internal* structural disease, but I think it is very likely that there is either effusion into the pericardium, or

adhesion of this [membrane] to the heart, from inflammation. I expect also that the cavities [of the heart] are enlarged. Some reason must be found for the sound, and also impulse, being so very perceptible on the *right* side; but this may arise from many causes, besides the dilatation—such as the *natural narrowness* of the patient's chest,—the induration of the right lung and its firm adhesion to the side,—disease of the exterior of the heart or its membrane,—or the pressure of fluid in the left cavity of the chest."

DISSECTION.

External appearance. Body considerably, yet not extremely emaciated. The right side of the chest is more flattened about the middle, and less rounded generally than the left, yet there is no sensible difference between the two on mensuration.

On laying back the sternum, and the cartilages of the ribs attached to it, the edges of both lungs were found adhering all along the sternal extremities of the ribs on both sides, so as entirely to close both cavities of the pleura. The greater part of the exposed space was filled by the heart and pericardium, which occupied the centre of the breast, and extended quite as far on the right as on the left of the middle of the sternum, the extreme point of the pericardium lying exactly under the right nipple. The Pericardium was not tense, and contained about five ounces of a straw-coloured limpid serum. The membrane was of its usual thickness and exhibited no mark of inflammation or other morbid alteration on any point of its surface. The *Heart* was considerably larger than the closed hand of the individual, and was estimated by us as being one-third above the natural size. It was flattened and flaccid, and somewhat rounder and blunter at the apex than is usual. The right auricle was turgid with blood, and seemed therefore much larger than the left, but on examination there was no very

obvious difference of size. The increased size of the heart was owing principally to simple dilatation of the cavities, although it was not found that there was (as is usually the case) either a proportionate extenuation or thickening of the ventricular parietes. On the contrary, these appeared of a thickness proportioned to the extent of the cavities, according to the ratio of the natural heart. The substance of both ventricles was flaccid, but that of the left was much softer than the right, yielding readily, almost like liver, to the pressure of the fingers. The parietes of the right ventricle varied in thickness, in different parts (from one-third to one-sixth of an inch), being thinnest near the origin of the pulmonary artery; the parietes of the left ventricle were on an average less than double that of the right. The relative capacity of the two ventricles seemed natural. The walls of the left as well as the right collapsed on being cut. All the valves and outlets were perfectly natural.

On the *left side* of the chest the upper lobe of the lungs was closely adhering to the chest by its whole surface, while all the rest of the lungs was separated from the side by a serous effusion, and compressed against the mediastinum into a compact substance, of the thickness of from half an inch to an inch, the anterior edge of which was attached, as already stated, to the cartilages of the ribs. The cavity of the pleura contained about 16oz. of a serous fluid like that found in the pericardium, and was lined throughout by a false membrane of a whitish colour, of the thickness of from a quarter to half an inch, and of a consistence varying, in different parts, from that of natural membrane to soft cheese,—the adherent surface being firm, and that in contact with the fluid soft and friable. The surface of this false membrane was rough, and gave origin to many soft bands which crossed the cavity from side to side. The upper lobe was considerably indurated throughout, yet could hardly be

said to be hepatized. It answered to the state of parts called *carnification* by Laennec, or to his description of the first stage of peripneumony. It was more like red cellular substance than liver. It exuded, when cut, a frothy serum, and was very imperfectly crepitous. It was thickly studded with small hard tubercles, scarcely any of which were of the size of a pea, and few of the size of a barley corn, and not one containing any soft, much less fluid, matter. The lower lobes, compressed as already mentioned, were softer than the upper and contained hardly any tubercles.

The right lung was intimately and most firmly attached to the bounding parietes throughout every point. Of course there was no fluid. The adhesion was here everywhere strong and organised. The substance of the lung was considerably indurated, but more or less crepitous every where, except on the outer part of the superior lobe, where the induration was greater and the adhesions to the ribs firmer. When cut they exuded a frothy fluid. Including even the upper lobe, no part had a decided liver-like character. There were only a few small tubercles in this lung, and no appearance of pus in any part of the viscus. As the body lay on the back, flat on a table, the upper surface of the liver reached within an inch and a half or couple of inches of the nipple. The interspaces of the ribs were large on both sides, and equally so.

The peritoneum contained a small quantity of serum. The liver was of the natural size, and, with all the rest of the viscera, perfectly healthy.

REMARKS.

This case is interesting on many accounts. It affords an instance, at once, both of the Acute and Chronic Pleurisy, and of dilatation of the heart. It is one of that numerous class of affections which are falsely included by many practitioners under the comprehensive term of consumption.

It exhibits a satisfactory exemplification of the utility of the Stethoscope in establishing a just Diagnosis. By means of this instrument, the progress of the Pleurisy was correctly traced; as there can be no doubt, from the appearances on dissection, that the progress was really such as was stated in the notes of diagnosis recorded during the patient's life. The error respecting the supposed existence of fluid in the inferior parts of the *right* side (the only error in the diagnosis) was an error more of the observer than of the instrument; the latter justly showed the non-existence of respiration over the part in question, but the former falsely referred (*from theory*) this result to the compression of a portion of effused fluid supposed to be still remaining, in place of the natural encroachment of the liver.

The same remark is equally applicable to the state of the heart. All the results of the stethoscopic examinations clearly indicated (according to Laennec) dilatation of the heart without extenuation of the parietes, and it is probable that this conclusion would have been at once adopted, without any hesitation, but for the obvious existence of other organic changes, which might possibly account for some of the results.

Upon the whole, I think I may venture to hold up this case as affording an example of precision of Diagnosis, not attainable by the ordinary mode of investigation, without the aid of mediate Auscultation or Percussion.

CASE XXIX.

Chronic Pleurisy, with contraction of the Chest.—Fatal Peripneumony.

Chichester Dispensary, June 3, 1823. John Parsons, ætat. 45, a farm-servant. Has been affected a month with various ailments which he describes very imperfectly, indeed almost unintelligibly. He seems to have a good deal of dyspnœa at present, and has a very anxious look. The

only *pain*, however, which he mentions, is seated in the præcordia, where there is slight tenderness on pressure. He says that when taken ill he was very costive, and three weeks since, passed a good deal of blood with his stools. His urine has been very high-coloured from the first. The tongue is covered with a whitish-yellow fur and is dry, but he has no thirst. The pulse is between 80 and 90, and of natural character. The skin is cool. He has walked several miles to the Dispensary.*

[V. S. ad unc. xvi. Vesicat: Pect:—Pilul: Hydrarg: c. Rheo ij, o. n. et Mist: Aper: Salin: coch. ij vel iij omni matutino.]

10th. Blood inflamed. Pain of præcordia less, and he thinks himself better; but he has more cough. Tongue still white. Water less loaded. Pulse 100. [V. S. ad unc. xij—Repet. Pil. et Mist.]

17th. Better. Cough less and breath better. Pulse 100, softer. [Repet. Pil. Mist: et Vesicat:]

24th. Better. Cough less. Pulse 96, soft. [Repet. Mist:]

July 1. u. a. Tongue still foul. Pulse 96. [Repet pil. j. o. n. et Mist: u. a.]

7th. Rather better. Pulse 90. [Repet.]

15th. u. a. Bowels regular. T. still foul. Pulse 90. [Omitt. omnia.]

22nd. Returned to work, after last report, for one day, but on the morrow had a return of his complaints—viz. feverish feelings, pain of the chest and cough for several days. These, he says, have nearly passed off. Pulse 100. T. still loaded. [Repet. Pilul: u. a. et Vesicator. lateri.]

29th. Took two pills, and was extremely purged and vomited all the following day. The bowels have since been

* To this report in the Dispensary Journal, I added, at the time, the following Queries: "*Bilious? Pulmonic? Both? Either?*"

regular, but he has had *fever* (he says) every night, and his breath is short. Pulse 108. T. dry. [Vesicator. pect: Mist: Ammon: Acet: ter die.]

August 5th. Not seen—said to be better. [Repet. Vesicat. and Mist:]

12th. Better—but pulse still quick and tongue loaded.

[Repet. Vesicator. ac Mist: Pil. Hydrarg. gr iij, o. n.]

19th. Looks pale and ill, and the pulse still continues from 110 to 120. Says he has no pain, except a slight uneasiness felt after much coughing. He can lie on either side; he does not sleep well, and is easily put out of breath. Tongue still very foul.

STETHOSCOPE. *Sound* of the heart natural, in the region of the heart,—*impulse* little or none.

Respiration puerile over all the left side, before and behind,—heard very low down on the back,—no species of rattle. On the whole of the *right side* the sound of respiration is almost *entirely inaudible*. In some places, especially on the upper parts, there is heard a low continuous murmur, but possessing nothing of the natural character of healthy respiration. Indeed, I should say, that the proper sound of respiration is *entirely wanting* over the whole of this side, before and behind. *Percussion* confirms, in a very marked manner, the results of the exploration of the cylinder, as the sound elicited by it over all the left side, is *very clear*; and over all the right, *very dull*: the difference of sound is indeed remarkable, and is very perceptible to the patient and by-standers.

When first taken ill, this man could only lie on the back;—after a time he rested chiefly on the right side; *now*, he can lie equally well on either side and on the back, and with the head as low as when in health. He wakes frequently from his sleep, but never in alarm. His urine is often high-coloured, but of natural quantity.

DIAGNOSIS. *Chronic Pleurisy, with copious effusion, of the right side.*

Sept. 16—Has been taking very little medicine, but using a very spare regimen. He thinks he gets somewhat better;—very little cough; and his breath, he says, is pretty good. The Stethoscope was again applied. *Respiration* now audible, in a very moderate degree, under the left clavicle, and as low as the third rib, but not lower. *Hægo-phonomism*—or at least a peculiar resonance of the voice within the chest on speaking,—perceptible on this side, but not on the other. *Respiration* still puerile on the left side, but less so than when last explored. Sound of the Heart very distinct over all the right side,—most distinct with the open Stethoscope.—Tongue somewhat cleaner. Pulse 102, soft.

Oct. 27. Has been pursuing the same system, and appears to have been gradually, but slowly, improving. He says he is much better, but he is evidently far from well. The pulse is slower, and he has little or no cough, nor dyspnoea, except on using bodily exertion. He now sleeps best on the left side. His appetite is pretty good, and the bowels regular, but the tongue is not clean, and the urine, although of natural quantity, is sometimes sedimentous.

It is now discovered, for the first time, that *Contraction of the right side of the chest* has taken place to a very considerable extent. On looking at the naked chest, the whole of the right side appears considerably less than the other, in all its dimensions, in length, width, and thickness, and the whole trunk seems depressed and swayed to the right side. The right shoulder is considerably lower than the left, and all the intercostal spaces much smaller. The inferior angle of the right scapula is a full inch lower than the left; and the superficial admeasurement of the right side (across the nipple) from the spine to the sternum, is full $\frac{3}{4}$ of an inch less than on the left. Upon this change of shape being

mentioned to the patient, he said that he had himself observed, of late, and his friends had pointed out the same thing to him, that he had got a habit of leaning to the right side, and of carrying his left shoulder higher.

In the trials of percussion and mediate auscultation, the contracted side still sounds perfectly *dull*, and gives indication of respiration only between the clavicle and nipple;—and this only in a slight degree.

Nov. 25.—Has continued slowly to improve. On being questioned, he admits that he is almost constantly sensible of a slight pain—or rather uneasiness, in the inferior parts of the right side, but his breath is now pretty good and he has scarcely ever any cough. He can lie on his back or on either side, but best on the left. Tongue still white.—Flatulence.—Urine natural. Pulse 96, small. Same results from percussion and the stethoscope.

Dec. 19th.—Has continued much better, and gains flesh and strength. His chief complaint is a very slight degree of pain in the right side, especially on exercise. He has a very inconsiderable cough, without any expectoration. He can lie on either side indifferently, also on the back, and with his head as low as usual, and he sleeps tolerably well. He suffers a good deal from flatulence, now and then, and on such occasions he finds his chest worse, being tender externally on both sides. The tongue still continues covered with a yellowish fur. Appetite good, and he now takes (contrary to my wish) a little animal food. Bowels regular. Urine more copious, not high-coloured, nor sedimentous. Pulse 84, soft, regular and moderately full,—fuller in the left arm than the right.

The Contraction of the right side of the chest is increased. The superficial admeasurement from the spine to the sternum, across the nipple, is now an inch and half less

than on the left; while the distance between the nipple and top of the shoulder is a full inch more on the former than the latter.

Percussion gives the preternatural sound over all the right side, but in a less degree over the superior parts. The *Respiration* (by *Stethoscope*) is audible over all the left side, puerile over the superior parts but less so than formerly; not puerile, and accompanied by a degree of roughness, on the inferior parts, both before and behind. The *Respiration* is now audible over the upper parts of the right side anteriorly, nearly as low as the nipple,—not puerile, though perhaps as loud as over the lower parts of the left side;—audible, also, over the back between the upper part of the scapula and spine. The proper sound of respiration is not heard on the right side, anywhere below the line of the nipple, before or behind, but, in some places, there is perceived a feeble continuous murmur.

Action of the heart natural: sound very distinct over all the right side anteriorly.

Percussion elicits a *particularly clear* sound over all the left side, even over the space where the stethoscope gives only moderate, or even obscure, respiration. [Qy. Are the lungs becoming *emphysematous* there?]

Jan. 20, 1824.—Continues to improve. Tongue cleaner.

Feb. 6.—Continues better. The chest still retains the altered shape, and altered sound, on percussion as before; but the stethoscope now indicates respiration, in a slight degree, over almost all the right side; the respiration is, however, still puerile on the left side.

April 2. [Not seen.] It appears that there has been, during the last week, a return of considerable pain in the chest, with much dyspnoea, but without increased quickness of pulse. He has been bled and blistered.

7th—I saw him to-day. He lies on the right side; is without any pain, but suffering from very great dyspnœa, and much cough. There is a good deal of expectoration of an extremely tenacious mucus, intermixed with blood. The pulse is upwards of 120, small and feeble. Urine very scanty and thick.

Respiration (by the Stethoscope) audible, but very short and *rough*, under the right clavicle; quite inaudible below the third rib, on this side, except as a slight momentary murmur occasionally, at the height of the inspiration: very distinctly audible over all the left side anteriorly; puerile, but decidedly less so than formerly, and very clearly with the roughness of peripneumony. *Percussion* elicits a good sound still over the left side, but none over the right, except immediately under the clavicle.

DIAGNOSIS. *Supervention of Acute Peripneumony, of both sides.* [V. S.—Vesicator.—Antimon. Tart.—&c.]. He died on the 10th.—Permission to examine the body could not be obtained.

REMARKS.

The preceding case is, at once, an interesting example of a pathological state, but little noticed in this country, and an instructive exemplification of the utility of Auscultation as a means of Diagnosis. Although we have not here, as in many of the cases of this volume, the demonstrative evidence of dissection in support of our opinions, I think it will scarcely be doubted by any competent judge, who reads the history of the case, that the Diagnosis formed was correct. Setting aside, indeed, the evidence furnished by Mediate Auscultation, and Percussion, we have here, in the contracted state of the chest, undoubted proof of the existence of Chronic Pleurisy. After the full and, I may add, beautiful description of this termination of Pleurisy, given by Laennec (Tom. I. p. 369,—Trans. p. 159.) it is

unnecessary to say any thing more respecting it here, than that the present example coincided, in every respect, with that description. So much so indeed was this the case, that the engravings given of this affection in the work of Laennec, might have passed (as far, at least, as the *chest* was concerned) as a representation of the case of Parsons.* (See Plates II and III at the end of this volume.)

It is hardly necessary to point out the importance of the knowledge afforded—I may say nearly exclusively—by Auscultation in this case. Up to the very day on which I first applied the Stethoscope (that is, upwards of three months from the commencement of his disease, and after he had been six weeks under my care), I am willing to confess that I had no clear idea of the precise seat and nature of this man's disease, and consequently, I was fixed neither in my treatment, nor my prognosis. From the moment that I ascertained the existence of chronic pleurisy, I was confident in both these important particulars, and freed at once from the thralldom of symptomatology and empiricism.

In one important respect, indeed, my prognosis was falsified by the event of the case: as, upon the discovery of the progressive contraction of the chest, and the gradual renewal of the sound of respiration on the contracted side, I had ventured to modify my original prognostic, and to entertain a belief, on the authority of Laennec, that the result would eventually be favourable. And I still am disposed to think that this would have been the case, but for the inva-

* I was surprised to find so distinguished an anatomist and pathologist as Mr. Shaw, in his excellent work on Diseases of the Spine, doubting the accuracy of Laennec's account of this morbid state of the parietes of the chest. Within the last twelve months I have myself seen more than one other example of it; though none, certainly, so marked as the above. One of these is recorded in the next case.

sion of the acute Peripneumony, which (and not the original disease) was certainly the cause of death; and which may, perhaps, be justly considered as an accidental occurrence.

CASE XXX.

Acute, ending in Chronic Pleurisy.—Contraction of the Chest.

Chichester Dispensary, Feb. 6, 1824. Thomas Bayley, ætat. 53. Three months ago he was attacked by a severe inflammatory affection of the right side of the chest, supposed at one time to be of the liver;—marked chiefly by severe pain of the lower part of the chest on that side, much cough without expectoration, inability (for six weeks) to lie on the side affected, and strong pyrexia. Very active antiphlogistic remedies were administered under the direction of an active practitioner, and apparently with great benefit; as he has considered himself quite convalescent, now more than a month. I have seen the patient for the first time to-day. He still suffers, occasionally, from slight pain of the right side, and also from cough. He however now lies indifferently on either side. There is only a slight degree of dyspnœa constantly present; but this is considerably increased by motion. The skin is quite cool; the tongue clean; the pulse between 80 and 90, soft, and occasionally intermitting. The bowels are regular, and there is no deficiency of urine. He has lost a good deal of flesh, but is by no means emaciated.

On examining the chest cursorily, the right side appears evidently smaller than the left, and especially compressed anteriorly. *Percussion* elicits only a dull sound from the greater part of the right side, particularly the lower half, while the sound is sufficiently distinct and clear over all the left side. *The Stethoscope* gives *most indistinct* respiration over all the right side, without rattle; and detects

no respiratory sound whatever over the lower parts. The respiration is very distinct, perhaps puerile, over all the left side.

DIAGNOSIS. *Chronic Pleurisy—Contraction of the Chest.*

March 4.—Continues precisely in the same state.—Chest was examined more particularly to day. The whole aspect of this man is that of a person having one side smaller than the other, and he evidently leans to the right side. The following admeasurements shew the degree of Contraction that has taken place: From the spinous process of one of the dorsal vertebræ, across the nipple, to the middle of the sternum,—one inch less on the right side than the left;—from the spinous process of one of the cervical vertebræ, across the clavicle, to the nipple,—a quarter of an inch less on the right side than the left. The intercostal spaces are evidently less on the right side than the left, and the distance from the third rib to the edge of the false ribs is full half an inch less on the former than on the latter side.

Percussion and the Stethoscope give precisely the same results as on the former trial.

The only things recommended, by way of treatment, to this patient, were gentle aperients to keep the bowels regular,—occasional blisters to the right side, and the patient adherence to an antiphlogistic regimen, most strict and long continued.

May 19.—Continues in the same state:—no improvement—not worse.

REMARKS.

It will be remarked that both in this and the preceding case I omitted to seek for *Hægophonism*, the only certain mark of distinction, according to Laennec, between the chronic peripneumony (scirrhus or hepatization of the lungs), and the chronic pleurisy with copious effusion; but

I presume the contraction of the chest, in these cases, sufficiently characterises the disease. The prognosis here, is, of course, very bad: the ultimate cure is extremely doubtful; the cure within a period even of many months is certainly not to be looked for. (See Laennec, *Ausc. Med.* Tom. 1. p. 341, 369; also Broussais, *Phleg: Chron:* Tom. 1. p. 325).

It is hardly necessary to point out the benefit in respect of Diagnosis, (and I may add, Prognosis and treatment,) derived in the foregoing case from the employment of Auscultation.

CASE XXXI.

Chronic Pleurisy.—Scirrhus Lung.

January 22, 1824. Mrs. E——s, ætat. 53.* For several winters past, has been subject to some cough, but never in so severe a degree as, at any time, to incapacitate her for attending to her household duties (she is the wife of a tradesman), until six months since, when she was attacked with some inflammatory affection of the chest, which required V.S. more than once. Since that time she has never been well; and during the two last months, she has been considerably worse. Her principal complaint has been a very violent cough, coming on by fits, lasting some considerable time with great severity, and accompanied by a very scanty expectoration of white and very viscid mucus: once or twice only, lately, this mucus has had a slight tinge of blood. She has had no pain in the chest, and complains now only of a very slight one, about the larynx on taking a deep inspiration. There is not much habitual dyspnoea while she remains quiet; but the breath is very short after coughing, or bodily exertion. The pulse is

* A patient of Mr. Hills, of Arundel

very little, if at all, quicker than natural; and it has not been so at any time. The bowels and appetite are in a natural state. She is fresh coloured, and has lost but little flesh. She cannot lie on the *right side*, and has remarked that the mamma on this side has become somewhat wasted. On examination, the right side of the chest, under the clavicle, seems somewhat more compressed than the other. On applying *Percussion*, the difference of sound on the two sides was so very great, as to be, at once, spontaneously remarked by the patient herself, and the by-standers, at the time;—the sound of the left side being very clear, and that of the right quite dull,—indeed *fleshy*. The *Stethoscope* gives analogous results,—the respiration on the *left* side being very loud, indeed puerile, and only just barely perceptible on the right. There is no *rattle*. *Hægophonism* appeared to me distinct on the right side;—at least there is a kind of *punchinello-note* very audible on this side and not at all on the other.

DIAGNOSIS. *Chronic Pleurisy, with copious effusion, of the right side.*

PROGNOSIS. *Very bad:—Death?*

I recommended a strict vegetable diet,—a few leeches, and a blister to the right side, to be repeated occasionally, and an almond emulsion with a little manna to regulate the bowels.

March 8. There is no improvement in any respect; on the contrary, the patient has evidently lost flesh, and the pulse has become considerably quicker (100-112). She has, however, no night sweats. The urine continues of natural quantity, but is somewhat sedimentous. Tongue clean.—Bowels regular. She has adhered strictly to the vegetable regimen. She can still lie only on the left side.

The Stethoscope and Percussion give the same results as formerly; and equally so on the back; viz. the clear

sound and puerile respiration on the left side, and the dull sound, and scarcely any indication of respiration on the right.

I recommended perseverance in the same regimen, and no other medicines than for the cough, or to alleviate symptoms.

PROGNOSIS. *Death within the year.*

May 11. I saw this person for a few minutes this morning. She appears to be gradually losing ground. She has for some time returned to an animal diet, and has dismissed her medical attendant. She is now, I believe, taking some quack medicine.

June 24. As this patient resides at a considerable distance in the country, I have seldom an opportunity of seeing her. I however, saw her this morning. She is considerably worse than when last seen (in May); having lost flesh, strength, and looks, and suffered from the increase of almost all her symptoms. She now remains, for the most part, sitting in bed, as she finds that any attempt to assume the horizontal posture, or to walk, greatly aggravates her dyspnoea, and tendency to cough. She cannot now even *lean* backwards without much uneasiness. Her easiest position is leaning forwards; but she rests occasionally on the side (and equally well on either) in a semi-erect posture. She sleeps very badly, and frequently awakes frightened. The cough is often severe but with pretty long intervals of ease. The expectoration is still pure frothy mucus, and not very copious, occasionally tinged with blood. The dyspnoea is constant, and constantly great; but is extremely aggravated by coughing or motion. She has no pain whatever in the chest, but complains of general uneasiness in her limbs. She is now very pallid, and is seldom flushed in the face; the skin is also cool and soft, but she frequently perspires copiously, chiefly on the chest. The pulse is

108, small and weak. The appetite is very bad; but the tongue is clean, and the bowels pretty regular; the urine is, also, pretty natural in kind and quantity. The legs are very slightly œdematous. The Stethoscope and Percussion give precisely the same results, as on the former trials, on both sides of the chest before and behind. I am doubtful whether respiration is at all perceptible on the right side: and the fleshy sound from Percussion is strongly marked.

July 5.—I heard nothing more of this patient until this morning, when I was informed of her death, which took place yesterday. I could learn no particulars of her condition since last seen by me, except that the symptoms had progressively increased, and terminated in a protracted agony.

Permission having been obtained to inspect the body, it was examined to day by Messrs. Williams and Tully, in the presence of Mr. Hills, and myself.

DISSECTION. Surface of the body very pale, but not œdematous. Percussion of the chest still elicited the preternatural sound from the right side, and the natural sound from the left. Previously to laying open the thorax, the point of a scalpel was thrust into the right side of the chest, on the axillary aspect, between the fourth and fifth ribs, when a stream of dark-yellow serum issued forth. The following is a brief note of the state of the viscera. The *right side* of the chest was completely filled with the kind of fluid already mentioned, as having flowed from the puncture in the side; at least, it would have been quite full, if the portion that escaped (about half a pint) had been added: the whole quantity being full three pints. Though of a dark saffron colour, like a strong infusion of souchong tea, this fluid was perfectly limpid, and unmixed with any shreds of lymph, or purulent deposition. The right lung was compressed on all sides, but especially from below, towards

its roots in the mediastinum, into a compact rounded body, somewhat in shape like a couple of closed fists joined together, and about the same size. In no point did the lung reach nearer than an inch and a half of the parietes of the chest; and on the lower parts, it was removed from these to three or four times this distance. The substance of this lung was very compact, much harder than sound liver, and pretty closely resembling, both in consistence and texture, certain varieties of what is commonly called scirrhus liver. The vesicular structure of the organ was entirely destroyed; and, consequently, the natural crepitous character was lost. A considerable portion of it was of a whitish colour, somewhat softer, and looked as if intimately imbued with a purulent fluid; but there was nothing like abscess or tubercle in any part of it: it sunk in water. The whole of the pleura on this side had lost its natural characters. It was considerably whiter than usual, and without the glossy lustre of a serous membrane. It was every where rough, and extremely uneven, to the touch. On examination, this roughness appeared to be owing to a sort of fibrous, or cartilaginous degeneration of the pleura; and to its being more prominent and conspicuous in certain points. This membrane seemed in some places, as if it lay over these rough scaly points, and in others, as if it lay under them. On cutting out portions of the pleura, however, these eminences appeared every where to form only one substance with it. The thicker points, when cut into, had clearly the character of soft cartilage. The effect of the whole was, to give to the pleura, an average thickness of three or four times the natural. There was not the slightest mark of recent inflammation;—nor any adhesion between the lungs and costal pleura. The *left side* contained perhaps half a pint of serum, of the same colour as that on the right; but on this side the lung and pleura, were nearly altogether sound. The

pleura retained its natural colour, and lustre, but contained a few minute cartilaginous points (perhaps not a dozen in all) in different parts of its surface. The lungs were of the natural volume, and consistence, being every where crepitous. When cut into they exuded a good deal of serum, but they were no where indurated. In the upper lobe, there was a single bony concretion of the size of a pea. The Pericardium contained a minute portion of limpid serum, and was of natural character throughout. The heart was very flaccid, but of natural size, shape, and consistence: all the valves, outlets, and vessels were sound.

There was no fluid in the abdomen; and the liver and all the viscera were sound.

REMARKS.

Whatever opinion may be entertained by different readers, respecting the real nature of the disease above described, there can only be one, as to the correctness of the diagnostics furnished by Auscultation. The sole conclusion authorised by the stethoscope and percussion, was—the compression of the right lung from the great accumulation of fluid on that side of the chest, and the soundness and freedom of the lung on the left side; every judgment formed of the pathology, beyond this, was formed from the common symptoms, and exclusively of auscultation. Keeping this in view, it is obvious that the indications of the stethoscope and percussion were perfectly correct. I think it necessary to premise this explanation, lest any cavilling about the correctness of the *name* given to the disease, in my Diagnosis inserted in the case, should be unjustly turned to the discredit of these diagnostic measures. My opinion of the nature of the disease may possibly be wrong; but the indications furnished by auscultation certainly were right.

I am, however, disposed to maintain that the *whole* of my Diagnosis was correct, and that the disease, was truly a

variety of Chronic Pleurisy. To such of my readers as are acquainted with the collections of morbid anatomy, and, in particular, with the more recent researches of the French pathologists (more especially Laennec, and Broussais), the state of the pleura, attempted to be described in the above case, will present nothing novel. They, however, may feel disposed to entertain doubts whether it ought to be considered as a product of simple inflammation, or as a peculiar degeneration ;—and, consequently, whether the disease ought to be denominated Chronic Pleurisy, or Symptomatic Hydrothorax. The morbid appearances in this case certainly agree very well with that species of Hydrothorax described by Laennec as depending on a *tuberculated* state of the pleura: Or, perhaps, they agree still better with a *granulated* state of this membrane described by him, and derived in the first instance from inflammation (*ibid.* p. 417.) The following extract from Broussais's account of Chronic Pleurisy, bears very closely on the character of the present case: “Si la pleurésie a été chronique, on remarque bien souvent que la séreuse a été considérablement épaissie; on trouve entre ses lamies des tubercules ou de petits dépôts de matière tuberculeuse; quelquefois son tissu paraît désorganisé et converti en substance lardacée, *en cartilage, en os*, etc. Ce liquide se rencontre ordinairement en très-grande quantité, et le poumon est quelquefois si atrophié, qu'on pourrait, au premier abord, s'imaginer qu'il a disparu.” *Phleg: Chron. T. i. p. 341.*

There can be little doubt, I think, that, in the present case, the disease of the pleura (whatever may be considered to be its nature), and the consequent effusion, were the primary affections; and the compression and hepatization of the lung, secondary. As far as regards the lung only, I consider this as an excellent example of Avenbrugger's *Scirrhus*; and I think there is every reason to attribute the

imperfect hectic of the latter stage of the disease, to the incipient softening of the indurated viscus, so well described by the same author.

Appendix to the Remarks on Case XXXI.

I received intimation of Mrs. E.'s death only just as the foregoing case was going to press ; and I was glad to be able to subjoin the account of the Dissection. The preceding REMARKS have been written subsequently to the examination of the body ; but it is perhaps only doing justice to the reader, as well as the author, to give those which were prepared *before the patient's death*, and which, together with the rest of the case, were perused by the two gentlemen who assisted me in the dissection, on our way to the place of examination : I, therefore, transcribe them here :—

“*Remarks.* The above case affords a simple and striking exemplification of the utility of Auscultation. The physician who had to form his opinion from the mere history of the disease, and the common symptoms recorded at my first visit, would not (I conceive) have found it an easy matter to arrive at a correct diagnosis or prognosis : at least, I may safely assert, that *I* could not have come to the same conclusion on these points, which I was enabled to do by means of auscultation. That the Diagnosis and Prognosis first recorded, are both just, I have no doubt in my own mind ; and I think the character and progress of the case, as above detailed, must, at all events, convince every one of the correctness of the prognosis.

I have denominated this case *Pleurisy* simply, from the belief that this is the principal, if not the primary disease : I think it, however, more than probable, that the lung itself is also affected.”

CASE XXXII.

Pleuro-Peripneumony.

June 22, 1824. Mr. U. ætat. 21*, (a neighbour of Mrs. E., the subject of the preceding case,) had enjoyed very good health, until last March, when he was attacked with a slight acute febrile disorder, of not very definite character, but apparently affecting the head more than any other part. He soon got the better of this, but was seized, in the following month, with pain in the left side of the chest and some cough, for which he was bled and blistered, with much benefit, as he got shortly after comparatively well. As he still continued, however, to have a slight cough occasionally, and at times an uneasiness in the left side, he consulted me on the 8th of May; and I saw him two or three times after this,—in the end of this month and beginning of June. During this period he had no very marked disease, except very slight cough, slight dyspnœa, and occasional wandering pains of the left side of the chest. The skin was cool, and the pulse very little quickened. At this time the Stethoscope detected a slight diminution of the natural intensity of respiration on the left side, but in no very marked degree. A blister was applied, and he took some common remedies.

Ten days ago, however, after having been apparently a good deal better for sometime, he was rather suddenly attacked with febrile symptoms, attended with great prostration of strength, flushing of the face, and a very moderate degree of pain in the chest, or rather in the præcordia, with cough, &c.

I saw this patient for the first time, since the present attack to-day, (June 22nd.) and found him in bed, lying with the head low, and affected as above described.

The following is the note I made of my visit:

* A patient of Mr. Wardroper, of Arundel.

He leans towards, rather than lies upon, the *left* side, although for two months previously to the present attack, he could lie only on the other side. He complains of very little pain, but feels a sense of uneasiness in different parts of the chest on taking a deep inspiration : a sufficient proof, however, that this pain is not great, is the fact of his *sighing* very frequently, and very profoundly, with relief. The pulse is under 90, neither strong nor hard ; and the skin is moist and of natural temperature. Within the last few days he has expectorated a good deal of a very thick mucus, which is occasionally tinged with blood.

The Stethoscope gives *puerile* respiration over the right side anteriorly, and detects no respiratory sound whatever on the left. *Percussion* gives precisely analogous results,—viz. the clear natural sound on the right side, and the completely fleshy preternatural sound on the left,—even when performed during the retention of the breath. There is no Hægophonism.

DIAGNOSIS. Acute Pleurisy of the left side, with copious effusion, compressing the lung ;—supervening to chronic peripneumony, and, perhaps, tubercles.

PROGNOSIS. Death, if not from the immediate attack, from the effects of the same disease in a chronic state ?

27th.—Symptoms continue precisely the same.

[I did not see Mr. U. after this. The following report I received from Mr. Wardroper.]

July 10.—Is, upon the whole, certainly better. There is now scarcely any cough, but still considerable expectoration, without it. The oppressed state of breathing is relieved, and he can now lie on either side. The pulse is now from 84 to 90 ; the heat of skin less ; and the tongue clean ; but that unpleasant difference in the sound, between the left and right side, on tapping with the hand, still continues. He has had repeated blisters, and continued the medicine (Antim : Tart : in saline mixture).

REMARKS.

After the observations made on the preceding cases of fluid accumulated in the chest, there appears to be little room for any special remarks on the case of Mr. U. In reference, however, to all these cases, and to the subject of Hydrothorax and Chronic Pleurisy, generally, it may be well, in this place, to offer a few words on the subject of removing the fluid from the chest, by means of a surgical operation.

In my remarks on a former case (p. 219.), I have said that the adhesions that exist in many cases of Chronic Pleurisy, render the operation nugatory, if not dangerous. The same remark applies to all those cases in which the lung itself is greatly diseased. When, however, the accumulation of fluid is copious, and the disease of not very long standing, and if there is good reason for believing the lungs not to be primarily affected, I presume that the operation is not only justifiable, but even very adviseable, in many cases.

This operation is of very antient date, and has been either practiced or recommended by the greater number of distinguished medical and surgical writers, from the time of Hippocrates downwards. In Kurt Sprengel's excellent History of Medicine, vol. ix., is given a most complete and comprehensive account of it, as practiced, from the earliest times to the present period. He names upwards of a hundred authors who had themselves performed it, or seen it performed; and gives brief notices of a vast number of cases, in which the result had been favourable. Among the advocates of this practice, although he mentions writers of all nations, and among others, many of this country,—he seems to have forgotten the name of his own countryman, Avenbrugger, although we have the authority of Stoll for believing him entitled to a distinguished place among these :
 "Cl. Avenbrugger, qui solus omnium *plurimos*

emisso e thorace pure sanavit Asserebat, plerosque intra sex septimanas a perforato thorace fuisse sanatos." (Rat. Med. Tom. III. p. 156.)

It would indeed seem, that this operation was much more frequently performed fifty and a hundred years ago, than it has been of late years. Is the comparative disuse of it occasioned by the experience of its general inutility or danger? Or—were the Surgeons and Physicians of former times better acquainted with the diagnostics of Empyema,—or more easily satisfied with their knowledge, in this respect,—than their modern successors? If I were to judge from my own limited experience, I would be disposed to say, that the paracentesis of the thorax is little thought of in this country, at the present time, chiefly because cases of chronic pleurisy (the usual form of Empyema) are so commonly overlooked in practice. From this, I do not mean to assert that the practice ought to be generally adopted; but only that it would be well not to lose sight of it; since it is a measure that has certainly frequently proved successful, and that too in a disease, which is generally if not always beyond the influence of medicine, and too often beyond the power of nature, to remove.

A reference to our recent practical writers in England, will show, how much the uncertainty of the signs of Empyema, has influenced the non-performance of the operation for its relief. (See C. Bell's Operat. Surg. vol. I. p. 327. S. Cooper's Surg. vol. I. p. 584. Good's Study of Med. vol. IV. p. 402-3.)

The following extract will show the favourable opinion entertained of the practice, by certainly one of our greatest modern authorities:—

“With regard to the operation itself, I am of opinion that it is one of much less severity than is usually imagined. Its success depends less on the condition of the pleura, than

on that of the lungs ; and when this viscus is not too deeply affected by numerous tubercles, or by a large gangrenous eschar, it ought almost always to succeed. The admission of air into the cavity of the pleura is probably, also, less dangerous than is commonly believed. This is, indeed, proved by the cases of wounds of the thorax, and the history of recoveries after the operation of empyema.

I have not met with any example of acute inflammation of the pleura supervening to the operation ; and I am not even sure whether the supervention of such an inflammation might not be the means of a speedy and certain cure of the disease, by producing an union between the lungs and ribs. At all events, in cases where the severity of the symptoms presented little hope of a cure from the operation, some benefit, and no danger, might result from simply puncturing the chest. Perhaps, even, it might be useful to draw off the fluids in this manner in all cases of chronic pleurisy, repeating, if necessary, the puncture, five or six times. This slight operation would be attended with no inconvenience, and the puncture will heal up immediately.” (Laennec, Trans. p. 191.)

In admitting the propriety of paracentesis, in any particular case of fluid accumulated in the chest, it is needless to point out the benefit to be derived from the employment of percussion or the stethoscope :—as they—and they alone—can give us any thing like certainty of the very existence of the disease to be removed.

CASE XXXIII.

Pleuro-Peripneumony.

Chichester Dispensary, Nov. 18, 1823. Henry Bridport, ætat. 17, Shoemaker. Thinks he caught cold a fortnight ago, since which time he has had a frequent dry cough, with pain of the lower part of the chest, especially

on the right side. Cough very bad at night. Has been bled twice, and blistered; and thinks he is better. A deep inspiration does not, at present, augment the pain. He can lie with the head low, and indifferently on either side. Pulse quick, but not hard. Bowels regular. Percussion elicits a good sound on both sides, and does not give pain. [Mist: Antim: Tart.]

21st.—Much as before. [V. S. ad unc: xvj, Vesicat: Mist: u. a.]

25th.—Blood not buffy, but he was relieved by V. S. Has slept better, and feels better; but he has still some pain on the lower part of the right side. Pulse 120, small and weak—very different from what the impulse of the heart would lead us to expect.

STETHOSCOPE. Respiration very distinct over all the *left* side, and almost puerile under the clavicle; audible over all the *right* side, but everywhere in a less degree than on the left,—and much less distinct, and accompanied by an obscure sort of rattle or roughness (*crepitous rattle*), over the inferior half. Impulse and sound of the heart considerable in the cardiac region, and the latter audible over the right side. [Repet. V. S. Vesicat: et Mist.]

28th.—Greatly relieved by V. S. in the course of a few hours. Blood inflamed. Cough less, but still troublesome. Pulse still quick, but softer. Crepitous rattle still exists on the right side. [Repet. Med.]

Dec. 2nd.—Symptoms rather worse. [V. S. ad unc. x, Vesic.—Mist.]

5th.—Felt relief, after a few hours, from the bleeding. Blood buffy. Pulse still quick, and small. Pain much less. [Mist: Antim: u. a.; etiam Mist. Aper. mane.]

12th.—Rather worse. [V. S. ad unc. x. Mist. Salin.]

16th.—Blood still much inflamed. Has still a good deal of cough with very little expectoration, and a consider-

able degree of pain on the right side, always present, but aggravated by a deep inspiration. Pulse still quick. Lies most easily on the right side, and with the head somewhat elevated.

STETHOSCOPE. *Respiration* extremely dull, over the whole of the *right* side; inaudible in many places, and, where audible, accompanied by the peculiar rattle and sort of "*abortive puerileness*" of peripneumony; quite inaudible below the clavicle, and over all the back: very distinct, over all the *left* side,—in many places decidedly puerile, and everywhere without any rattle. [*Hægophonism* not sought for.]

Percussion elicits a *very dull* sound over all the right back, and a very clear one over all the left; similar results are obtained on the anterior parts of the chest, but in a less striking degree, owing, perhaps, to the imperfect application of it on account of the great tenderness of the right side: even pressure on the intercostal spaces, on this side, produces much pain. [*Hirudines et Vesicator. lateri dextro.*]

After this time he seemed to improve, the inflammation being evidently less. On the 24th February, it is stated that—*Percussion* elicits a good sound over the superior half of the right side; and that *respiration* is audible, over the same place, but much duller than on the other side. The pulse is still very quick (120), he sleeps badly, and is very hot at night. In short, hectic symptoms had begun to show themselves. The cough still continued, with little or no expectoration.

March 16th.—Thinks he gets better slowly. He is less feverish, but he has still some cough (without expectoration), and feels some pain on the right side on taking a deep inspiration. There is still a very marked difference in the results obtained from the two sides by *percussion* and

the stethoscope, but the difference is much less than formerly, except over the inferior part of the right side, where respiration and the natural sound from percussion are wanting.

April 13th.—He has been getting progressively worse for some weeks past ; the hectic state being now perfectly established.

May 14th.—Is rapidly declining. He has, however, not much expectoration, nor of a purulent character. Great night sweats—emaciation—pulse never under 120.

Respiration perceptible over the anterior parts of both sides (the back not explored) except below the level of the fifth rib on the right ; everywhere less distinct on the right side than on the left,—yet it is not puerile on the latter, nor extremely obscure on the former.

Percussion elicits a very good sound from both sides, except below the 5th rib, on the right.

June 28th.—Has been getting progressively worse. Has every symptom of confirmed hectic, and is so weak and emaciated as to be hardly able to get out of bed. The night sweats are profuse, and he has had colliquative diarrhæa for several weeks. The pulse to-day is however only 102. He lies with the head low, and, at present, on the left side : he however can lie equally well on either. He has a good deal of cough, but very little expectoration ; and his mother remarked to me that he never had had expectoration like a phthisical patient, several of whom she had formerly seen.

He is much emaciated, and the right chest (anteriorly) seems considerably more compressed than the other (this was observed in the beginning of his illness).

Respiration (by the *Stethoscope*) extremely obscure over all the right side anteriorly (back not examined), yet perceptible every where (except in one or two points) on at-

tentive examination, but in a very slight degree; more perceptible on the left side, yet by no means very loud, and accompanied with a slight sibilous rattle under the clavicle: not examined on the inferior parts.

Percussion elicits a very distinct and clear sound over both sides.

REMARKS.

There is some peculiarity in the comparative results of Mediate Auscultation and Percussion in the latter period of the above case. I do not think, however, that *Pneumo-Thorax* has supervened. Both this and the preceding cases (whatever be their precise nature) satisfactorily illustrate the correctness of the axiom of Avenbrugger (see page 22 of this volume) that “the destitution of sound over one whole side, is generally a fatal sign,” in inflammatory diseases.

CASE XXXIV.

(Supposed) Chronic Pleurisy.

Chichester Dispensary, June 28, 1822. Joseph Poor, a country labourer, was affected for the first time about two years since, with a severe pain in the under part of the right chest, which from his account, must have evidently been an inflammatory affection. The pain was under the short ribs (i. e. *centrad*) and extended from the spine to the præcordia. He has had many similar attacks since that time, but that which he labours under at present has been of longer continuance (viz. nine weeks) and is of greater severity than any of the preceding. The symptoms are few and simple: viz. pain in the part, increased by a deep inspiration, by sighing, coughing, &c; a slight degree of dyspnœa; frequent, short, and dry cough; nearly complete inability to lie down in bed, and greater facility to bear the recumbent posture on the left than on the right side. There is no distension of the abdomen nor præcordia; pressure under the

right short ribs gives no pain, unless strong, and then only in a slight degree. No pain about the shoulder. The whole of the digestive functions have been, and are regular. The tongue is clean. There is no thirst, and he never experiences heats, chills or night perspirations. Pulse 90, small and soft. Has been under the care of several medical men, and was bled once about nine weeks since. He has been obliged to keep his bed the greater part of the last nine weeks.

This appearing to me evidently a case of chronic pleurisy, I attacked it by small general bleedings, cupping, and blisters,—calomel and opium, and proper regimen. The blood was found to be much inflamed. On the 16th of next month he was discharged to his parish, considerably better, the pain being less, and his ability to assume the horizontal posture considerably increased. He showed himself at the Dispensary again on the 13th of August, under which date is the following report of his case:—Has been taking calomel and opium and has used repeated blisters. He is better, but has still pain at times in his side. In general, he feels pretty well, *until he moves*, when he is instantly seized with great dyspnœa and also cough, but not with palpitation; and he never has had palpitation. At present, the pain of the right side is only felt on taking a very deep inspiration. He lies best on the left side. Applied the *Stethoscope*, and fully explored the state of Respiration; but I made no note of the state of the Heart. The sound of respiration is found very perfect and distinct (approaching to puerile) over all the chest, before and behind, on both sides, except on the *lower half* of the right side, over a space involving the whole of this part, but rising highest on the lateral part of the chest, and sloping downwards on both sides, to the spine and the sternum. Over the upper part of this space the sound of respiration can be rendered audible by causing the patient to take a very deep

inspiration, but only *then* in a very slight degree ; below this no effort renders it perceptible. **DIAGNOSIS.** *Chronic Pleurisy, occupying the lower half of the right cavity of the pleura.* [Vesicator.]

August 27. Continues better. The dyspnœa is much less and he feels stronger.

REMARKS.

I think the above a good example of what I consider to be rather a frequent disease—viz. circumscribed or partial chronic pleurisy. It will be seen from the detail of the case, that I formed my Diagnosis previously to the application of the Stethoscope. So far, however, from considering this circumstance as detracting from the merit of the instrument, I look upon it as being, in the absence of dissection, the greatest test of its utility and value. I should be sorry to find the stethoscope considered as in itself all-sufficient, and excluding the necessity of other diagnostics.

CASE XXXV.

Chronic Peripneumony.

Chichester Dispensary, Nov. 15, 1823. William Dolman, Carpenter, ætat. 48. Has always had a delicate chest, being subject to frequent colds, often with much cough, but with little expectoration, dyspnœa, or pain. During the last year and a half, however, he has had a much more severe and frequent cough, with more or less of uneasiness about the chest, and a good deal of pain in the site of the trachæa, below the larynx, aggravated by deglutition and the act of expectoration. During the last four months he has been much worse, having been unable to work, with great increase of cough, pain in the chest, &c: he has also had repeated hæmoptysis to a very considerable extent, and a constant and copious expectoration of a watery or mucous fluid,—viscid, frothy, dark and very fetid. Within

the last eight days, he has not spit any pure blood; but the expectoration, which is chiefly very viscid mucus, is at present tinged with blood. He has a constant feeling of great soreness over the whole chest,—insomuch that a moderate degree of *Percussion*, applied some days since, occasioned a very severe pain for twenty-four hours. He cannot lie on either side, nor with the head low. He sleeps very badly, principally, he thinks, on account of the cough. He has not any fever, properly so called; nor has he perspired very much. He is, however, much emaciated, with a complexion rather of a dirty brown, than with leucophlegmatic paleness. The pulse is to-day 96; but it has usually not been more than 84. The bowels are regular,—the tongue pretty clean,—the urine of natural quantity.

STETHOSCOPE. *Right side.* Respiration extremely imperfect; yet every where perceptible, above the nipple, on the patient's taking a deep [inspiration,—but with very various intensity in different places, and in the same place at different times; in some points with a slight crepitous, and in others with a sibilous rattle; somewhat more distinct under the cartilages of the ribs; not at all audible below (*sacrad*) the nipple, nor under the scapular end of the clavicle. Imperfect pectoriloquism about the nipple. *Left side.* Respiration more distinct under the clavicle, but over the rest of the side as imperfect as on the right. A slight sibilous rattle; but nothing like pectoriloquism or hæmophonism.

DIAGNOSIS. *Chronic Peripneumony.*

PROGNOSIS. *Death.*

The only remedies here prescribed were with the view of relieving the pain, and cough, and procuring sleep.

Dec. 14. Has been of late considerably more easy; cough and expectoration and pain, being all a good deal less.

STETHOSCOPE.—Respiration still extremely imper-

fect; heard, however, in different points of both sides (and in the same points at different times), as a sufficiently loud, but extremely brief, abrupt, or broken hiss. In no place is the natural sound of respiration to be distinguished. Imperfect pectoriloquism under the scapular end of the right clavicle. Sound of the heart very distinct in the cardiac region, with a sort of silvery thrill in the sound,—slightly audible under both clavicles; sound of natural character,—as is the rythm. Hardly any impulse in the region of the heart. Skin cool; pulse 86, soft.

This poor man lingered on, much in the same state, with occasional fallacious gleams of amendment, and many relapses of aggravated suffering, coughing greatly, and expectorating much purulent fetid sanies,—until the very end of February, when he died. The chest was examined in my presence by Mr. W. Guy, and Mr. Tully.

DISSECTION. The heart slightly enlarged, and with thin parietes; yet short of what could be considered morbid.

Right lung universally adhering to the pleura of the ribs, diaphragm and pericardium, by attachments clearly of old date; also universally indurated (yet nowhere completely hepatized), gorged with a black offensive sanies, and with many ulcerated cavities in different parts, but without any tubercles. Left lung equally adherent to the parietes, harder than natural throughout, yet considerably less so than the right, especially the upper lobe which was still crepitous; containing a good many black unsoftened tuberculous-looking masses. Abdominal viscera sound.

REMARKS.

The Diagnosis, in the above case, was perfectly correct; although, I think, I should have come to the same conclusion without Auscultation. I consider the species of the respiration, attempted to be described in this case, as very characteristic of chronic peripneumony. I however

doubt if I have made my meaning sufficiently intelligible to others. Perhaps this peculiar respiration might be described as a variety of the *puerile*, only much lower, and abruptly cut short immediately after the commencement of each inspiration or expiration. I presume some of the morbid appearances were referable to the state termed *melanosis* by the French.

CASE XXXVI.

Chronic Peripneumony, without the usual symptoms.

Nov. 20, 1822. Mr. M.'s cook-maid, ætat. 37. This woman had been ailing, but not formally sick, nor unfitted for her daily duty, for the last twelve months, with a complaint which she and her fellow-servants called rhumatic pains in the limbs. These slighter ailments were said to have followed a more acute attack of disease not specified. Since that attack her fellow-servants had remarked that upon going up stairs, or exerting herself strongly, her breath was very short, but she had no cough, nor pain of the chest. Two months ago, her weakness increased considerably, and for six weeks before her death, she was incapable of doing her work. During the last three weeks of her life, she was attended very assiduously by an intelligent practitioner, who considered the case as rather of an anomalous and equivocal character. The most prominent symptoms were said to be those of febrile irritation of the circulation, constantly present, but only in a moderate degree, without any local pain, and with no function particularly disordered. She had no cough, and while remaining at rest her dyspnoea was very trifling, until within two or three days of death, when it became more marked and constant.

DISSECTION. Upon examining the body to day, the only morbid appearances, that could at all account for her death, were found in the Thorax. The whole of the right

lung was most firmly attached in every point to the parietes of the cavity, by well-organized and evidently antient adhesions. There was similar adhesion of the *anterior* parts of the left lung, but not of the posterior parts. There was also universal inflammation of the substance of both lungs, answering exactly to Laennec's description of the first variety or stage of peripneumony; i. e. the substance of the lungs was comparatively solid, but considerably less so than *liver*; it was of a pale red colour,—exuded, when cut, a great deal of a sanious fluid, and exhibited on the incised surfaces, in a very marked manner, the *granulated* character considered peculiar to inflammation of this viscus, by the author just mentioned. The natural crepitous character of lung existed, but in a very slight degree, in every part; and some few portions, especially about the anterior edges, were considerably less indurated than the rest. The posterior part of the lungs was the firmest and darkest-coloured, and the whole of the left lung was more solid than the right. Portions cut from the indurated lungs did *not* sink in water, while similar portions of the liver did. The interior parts of the pericardium and heart were quite sound.

REMARKS.

The above is clearly an example of Chronic Peripneumony, which can hardly be said to have been indicated by the common signs of that disease, but which, I conceive, would have been, at once, recognised by means of the Stethoscope or Percussion. I do not mean to say, that the result of the case would have been at all different, had its real nature been at once recognised; as it had, probably, grown to an irremediable height before application was made for relief. But I do maintain that by means of a correct diagnosis, a truer prognosis would have been formed; while the physician would have enjoyed the only consolation that is left

to him when treating a disorder which baffles all his attempts at cure or even relief,—the conviction, namely, that he fails, not from ignorance of the true means of relief, but from the absolute want of any such means in the present state of medical science.

CASE XXXVII.

Pulmonary Catarrh, or Bronchitis.

Chichester Dispensary, August 29, 1823. Caleb Foden, ætat. 50. While in good health, was exposed to rain, eight days since, and was attacked the same night with pains about the shoulders and chest. Since that time he has continued very unwell, with pain of chest, dyspnœa, short cough, with difficult expectoration of thick tenacious sputa. He cannot lie down in bed. Pulse 112, small. Tongue coated, breath offensive, bowels regular. Was bled last night to 16 oz : blood much buffed and cupped.

Stethoscope indicates very distinct respiration over the whole chest, before and behind, every where accompanied by a loud sonorous rattle, loudest over the right side, and heard chiefly in expiration. [V.S. ad unc. xvi. Vesicator: pect: dext:—Mist. Aper: Antimon: coch ij ter quotidie.]

Sep, 5. Much better in every respect; but he has still cough, and a feeling of tightness across the chest. He can now lie down; and the pulse is only 88, and softer. Tongue cleaner, but still coated. Bowels regular.

Respiration (by Stethoscope) good every where, and the rattle almost gone. [Repet. Vesicator.—Mist. Ant: Tart: ter quotidie.]

12. Still better. Pulse 84. Repet. Mist.

19. Well. Respiration quite natural: Rattle quite gone. *Discharged.*

REMARKS.

The above is a familiar example of the common in-

inflammatory Catarrh, affecting the air-passages. I give it merely as a specimen of the indications furnished by the stethoscope in this disease. These indications, it is obvious, may often be of the first importance in respect of diagnosis, prognosis and treatment. Every practitioner will allow that severe and fatal peripneumonies have frequently in their early stages, no more formidable symptoms than were exhibited by the foregoing simple and slight affection. Suppose, however, in such a case, the general or external symptoms (viz. pulse, dyspnœa, cough, &c.) had suffered considerable aggravation, without a corresponding increase of the organic affection of the lungs (a common case),—we should have been warranted, I presume, in adhering to the prognosis previously delivered, notwithstanding the seeming change: on the other hand, if these common symptoms had become apparently more favourable while the pulmonary obstruction increased (also not an unusual event), our prognosis ought to become more unfavourable, and our treatment more vigorous. Now, in such a case,—have we any test or measure of this most important discrepancy between what is and what *seems*—but in Auscultation?—If the symptoms and actual pathology accord, this diagnostic means adds to the security of our judgment drawn from the former;—if they do not accord, it is to it alone, I conceive, in many cases, that we can look for information, on which we can safely rely.

CASE XXXVIII.

(Suspected) Emphysema of the Lungs.

Chichester Dispensary, July 1, 1824. W. Forster, ætat. 52, had been for thirty years affected with dyspeptic complaints, apparently confined to the stomach, the most marked symptom being pyrosis, unaccompanied by any great degree of debility or other disorder.

In addition to the abovementioned stomach complaints, he has been affected, during the last nine months, with symptoms referable to the chest. These still continue, and consist principally of slight habitual dyspnœa, becoming at times very considerable,—occasional fits of cough with expectoration, hoarseness, and some soreness in the throat when swallowing. It appears that the dyspnœa is always considerable on rising in the morning, and for about half an hour thereafter, and is constantly *relieved* by walking, and does not return during the day. Going up stairs does not much affect the breath, and he sleeps well, and indifferently in any posture. He has lost a good deal of flesh. Bowels regular; appetite not good; tongue very white and loaded; no thirst; urine high coloured; no pain nor tension in the bowels; no night sweats. Pulse 84, irregular, and occasionally intermitting, weak. [Pil: Hydr. c. Rheo ij o. n. Mist. Quass. c. Senn. mane.]

7th.—Palpitation is now present, perhaps from nervous agitation.

Stethoscope. Sound of the heart loud in the region of the heart; and louder on the right side of the chest, than on the left. *Respiration* is audible where explored, viz. under the clavicles, but consists rather of a slight *continous murmur*, than of the natural alternation of sibilous sounds. [Repet.]

10th.—Chest again explored. Circulation now quiet. —The sound of respiration is scarcely audible anywhere throughout the chest. Below the clavicles there is heard a sort of feeble continuous murmur, as already mentioned, but no distinct sound either of inspiration or expiration; over the remainder of the chest, there is no sound whatever. *Percussion* elicits a good and clear sound everywhere. Action and impulse of the heart natural; sound slightly perceived on both sides of the back.

DIAGNOSIS. *Emphysema Pulmonum? Dilatation of the Heart?*

REMARKS.

I introduce the above case more for the sake of calling the reader's attention to the consideration of its probable pathology, than as affording any very satisfactory exemplification of the diagnostic power of auscultation. Yet, it must be confessed, that by means of this power, a nearer approach to the probable nature of the disease seems gained, than is afforded by the general symptoms. From these, it is impossible to form any very precise opinion as to the degree or nature of the disease existing in the chest. All the symptoms referable to this cavity, might arise from almost *any affection of any of the parts contained in it*. The exploration of the Stethoscope, however, shows the existence of a very peculiar condition of the lungs; and from the coexistence of a clear sound on percussion, and the absence of the usual respiratory sound over the whole chest,—the pathognomonic sign of *Emphysema of the Lungs* given by Laennec (vol. 2. p. 258), I am disposed to consider the disease as an example of this little-known, though probably not very rare, affection. Perhaps this morbid condition of the lungs affords an example of a disease, which is often more justly intitled to the name of Asthma than any other. In the present instance, however, the symptoms were hardly such as to intitle it to be classed under this head.

CASE XXXIX.

Asthma.

September 24, 1823. Mr. L. ætat. 38, had enjoyed tolerably good health, and never suffered from any affection of the chest, until about five years since, when he was rather suddenly attacked with a paroxysm of asthmatic breathlessness. Similar paroxysms have continued to attack him

ever since, once in four weeks, on an average. Last summer, however, he was at one time several months without any paroxysm; while, during the present, he has been affected as frequently as once a fortnight, and, for the last three weeks, as often as twice every week. The average duration of these attacks has been two or three days,—often only one day, sometimes only a few hours. They have preserved the same character throughout, and consist simply of very difficult and short breath (dyspnœa) with wheezing, palpitation of the heart (perceived internally by the patient), and a feeling of stricture and slight soreness across the lower part of the chest, about a hand's-breadth on each side of the sternum. The paroxysms frequently come on at night, but at no particular hour. When attacked in the day-time, he is first aware of a sense of tightness and oppression across the chest, gradually increasing for half an hour, or an hour, when the paroxysm is generally at its height. Almost as soon as he is sensible of the oppression (but never *before*) he experiences palpitation of the heart, and this *always* continues through the whole attack, and passes off with it. When attacked at night, he is (if asleep) awaked by a simultaneous sense of oppression and palpitation. There is no cough before, during, or after the paroxysm; and there is never any expectoration. He often proceeds with his ordinary occupation (writing) during the whole attack, but while it continues he has but little sleep. His bowels are always relaxed as long as the fit lasts (although at other times rather confined), and he also then makes a great deal of limpid urine. In the intervals, he is pretty well, but not able to take very violent exercise; yet he has no habitual dyspnœa worthy of notice, nor palpitation of the heart; nor is this latter state ever induced by the common exercise of quick walking, or even by running up stairs.

For the last two years he has, by advice, slept in a

sitting position in bed, although he can lie with his head much lower than this, but yet not so low as before he was affected with the Asthma. He can lie much better on the *right* than on the left side, and always does so. He is moderately lusty. He labours at this time under one of his usual paroxysms, of great dyspnœa, wheezing, oppression on the chest, and palpitation. He was attacked yesterday. The pulse is 114, small and regular.

Stethoscope. *Impulse* and *sound* of the heart, proportional to each other, and considerably greater than natural, in the cardiac region. Sound audible over both sides of the chest anteriorly, but not very loud, just perceptible on the left side of the back, but not on the right. Impulse rather more under the xiphoid. Rythm perfectly natural. *Respiration* audible over the whole chest, but slight, and hardly perceptible in many places but by means of a *very loud sibilous rattle* (like the sighing of wind through crevices, &c.) which accompanies it over the whole chest, and which is most audible on *expiration*.

With the view of affording temporary relief by unloading the heart and lungs, I prescribed venesection. I saw this patient on the following day, and was informed that he became very faint after the loss of about six oz. of blood (which is of natural character). He experienced no speedy relief from the bleeding; but the paroxysm began to disappear in the course of the night, and he is now (11. a. m.) *nearly* well, but not quite.

The Stethoscope now shows the sibilous rattle to be almost entirely gone, over the whole chest; and it is also now evident that the natural sound of respiration is *very indistinct* over the greater part of the chest: there being perceived rather a very feeble continuous murmur, without any of the usual alternating sounds of healthy inspiration and expiration. In some places, especially under the right clavicle, and in a less degree under the left, and in some

points on the back, respiration is more distinct and natural. The sound and impulse of the heart are now quite natural; the sound is heard in a very moderate degree, on the right side anteriorly. The pulse is now much slower, and of healthy character.

Jan. 1824. He has been pretty well of late; and is so at present. Pulse 72, very small and regular.

STETHOSCOPE. *Respiration* on the *right* side, very indistinct every where;—indeed not at all perceptible, in many places, even on a quick inspiration. In one point under the clavicle there is a slight rattle; elsewhere there is none. Respiration somewhat more audible on the *left* side, especially during a *quick* inspiration; but still, on the whole, extremely feeble; quite as audible on the inferior parts as on the upper: no rattle.

Percussion elicits every where the natural sound.

REMARKS.

This is clearly a case of Asthma, more properly so called, and in perhaps as pure a state as it usually occurs. Even here, however, I think there is obviously some material or organic morbid affection of the lungs, as indicated by the unnatural state of the respiratory sound over the whole chest;—most probably *Emphysema*, as was suspected in the preceding case.

I give these two cases not so much as containing any thing novel or very interesting, but as pointing to a mode of studying the character and pathology of Asthma, which may prove more satisfactory than that by means of the common symptoms only.

P. S. Since the two last cases were written, I have met with several examples of well-marked *Emphysema* of the lungs, recognised by the differential diagnostics of *Mediate Auscultation* and *Percussion*.

Appendix :

OUTLINE OF AN ESSAY

ON THE PHYSICAL DIAGNOSTICS

OF

DISEASES OF THE CHEST;

TRANSLATED AND ABRIDGED

(WITH SOME ADDITIONS)

FROM A WORK BY DR. COLLIN,

ENTITLED

**“ DES DIVERSES METHODES D' EXPLORATION DE LA POITRINE, ET DE LEUR
APPLICATION AU DIAGNOSTIC DE SES MALADIES ; ”**

PUBLISHED AT PARIS IN

1824.

Il sera facile de voir que rarement un seul mode d'examen est suffisant, que ce n'est qu'en en appelant à son aide deux ou un plus grand nombre, en comparant les symptômes qu'ils fournissent, et souvent même les symptômes généraux, qu'on parvient à porter un diagnostic assuré; mais aussi il restera prouvé, je crois, que, dans la plupart des cas, on arrive avec le secours de ces méthodes à une connaissance du siège de la lésion, de sa nature et de son étendue, aussi parfaite que celle que pourraient donner la vue et le toucher.

COLLIN.

ON THE DIFFERENT MODES OF
EXPLORING THE CHEST.

After the last sheet of the foregoing work was in the hands of the printer, I received, through the kindness of a friend in town, a pamphlet just published in Paris, by a young Physician of the name of Collin, "On the different modes of exploring the Chest, and their application to the Diagnosis of its diseases." This consists of two parts,—the FIRST being a brief outline of the Exploration of the Chest by means of *Auscultation*,—*Percussion*,—*Succussion*,—*Mensuration*,—and simple *Inspection* of its movements, during respiration; and the SECOND, the special application of these different measures to the diagnosis of individual diseases. The whole is avowedly a compilation; and, with a very few exceptions, only contains what is to be found in the works of Laennec, Corvisart, Avenbrugger, and Landré-Beauvais. As, however, it contains, in one view, a correct, and condensed outline of the different methods; and as, from its recent publication, it probably takes notice of the actual state of these in Paris, I have thought it necessary to present some account of it to the English reader. As the more important matters contained in the First Part of the pamphlet, are already fully treated of in the First Part of the present volume, I shall only, in this place, take notice of such particulars, as possess any no-

vely. But as the Second Part appears to me to contain a correct and comprehensive Epitome of what may be called the Physical Diagnostics of Diseases of the Chest; and as I think it cannot fail to be useful to students, I shall here give a condensed Translation of it.

For further and more complete details on the subjects treated of, I refer generally to the treatise of Avenbrugger, and the extract from Laennec in the present volume,—and especially to the Original Treatise by the last named author.

PART FIRST.

CHAP. I.—EXAMINATION OF THE MOTIONS OF THE CHEST IN RESPIRATION.

A. *In a state of health.*

(This well known.)

B. *In a state of Disease.* (The patient to be seated, if practicable.)

The respiration may be

- a. Too frequently repeated, or the reverse;
- b. Too quickly, or slowly performed;
- c. Irregular, intermittent, interrupted, &c.;
- d. Large or small—according to the degree of dilatation and contraction of the Chest:—high and sublime are varieties; the former being small R. with a dilated chest, as is peripneumony,—the latter, large and infrequent R.

e. Equal or unequal—according as the expirations and inspirations correspond, or the reverse. This inequality always exists in Acute Pleurisy and Peripneumony,—but inversely; the inspirations being short and the expirations long in the former, and the reverse in the latter. The cause of the difference is sufficiently obvious, on considering the

parts respectively affected in each disease, and the necessary impression made on these parts by the opposite actions of the chest.

f. Easy or difficult,—according as Respiration is performed by the usual muscles, or the accessory also.

g. Complete or incomplete—according as both sides, or only one is more or less moveable. This is one of the most useful signs; it may arise from Pleurisy, Peripneumony, or simple Pleurodyne, &c.

h. Abdominal—when performed more or less exclusively by the abdominal muscles. This is a common state in diseases of the Chest: it often occurs also, in old persons, from ossification of the cartilages.

i. Thoracic—the reverse of the former, when the thorax alone moves. This occurs in many abdominal diseases, especially in inflammation; also more or less in pregnancy, &c.

CHAP. II.—PERCUSSION.

[This chapter scarcely contains any thing that is not much more fully given in Avenbrugger: I subjoin the heads, chiefly for the sake of uniformity. T.]

A. *In Health.*

The sound varies according to

- a.* The part of the chest;
- b.* The degree of fatness or leanness;
- c.* The posture and situation of the patient;
- d.* The mode of percussion;

To percuss both sides *similarly*, in every respect; and every point alternately on each side,—not first going over one side, and then proceeding to the other.

B. *In Disease.*

The sound may be

- a.* Dull(*sourd*)
 - b.* Obscure.
- } Severe Catarrh, first stage of Peripneumony, Œdema of the lungs, &c.

d. None (wanting). Hepatization of the lungs,—displacement by fluids, morbid growths, &c.

e. Greater than natural.—Pneumo-Thorax—Emphysema of the lungs.

CHAP. III—AUSCULTATION.

A. *In Health.*

1. The Respiration :

This varies according to

a. The parts of the chest ;

b. The frequency of Respiration ;

c. The age, sex, &c.

2. The Voice :

This also varies according to

a. The part of the chest examined ;

b. The tone or key of the voice of the individual.

3. The Heart :

The phenomena under this head are

a. The extent of pulsation ;

b. The shock ;

c. The sound ;

d. The rythm.

B. *In Disease.*

1. Respiration.

This varies much. It may be

a. Weaker than natural ;

b. Stronger than natural—Puerile—Tracheal ;

c. Entirely wanting.

As the intensity of the respiratory sound varies much in different persons, in health, it is only by comparing different parts of the same chest, that we can decide respecting its morbid strength or feebleness in any one case. This comparison is the more easy, as it is seldom that the whole of the lungs are affected at the same time. The chief causes of the *diminution* of the natural sound are,—the slight ex-

tent of motion in the chest (this is the most common); the partial obstruction of some bronchial tubes, from swelling of their inner membrane, or from the matter of sputa; the presence of the false membranes of pleurisy, which are still soft, and only beginning to be organised

d. Combined with foreign sounds (the Rattle.)

The *Crepitous rattle* is compared to the sound emitted by boiling butter,—the crepitation of salts—or a portion of dried lungs compressed between the fingers. A new variety of this rattle, denominated by Laennec *sub-crepitous*, is stated to characterise œdema of the lungs.

2. The Voice.

a. Resonance. This is considered as a sign of disease, when found existing in a greater degree than is natural, or in a part of the chest, where it is not usually observed. It is said to accompany a certain degree of induration of the substance of the lungs.

b. Pectoriloquism. In addition to the usual source of this, viz. tuberculous excavations communicating with the bronchia,—it is stated occasionally to accompany a hepatised or otherwise indurated lung, when this immediately adjoins the trachæa, or is traversed by large bronchial tubes.

c. Hægophonism. M. Laennec now considers this as caused by the flattening of the bronchia.

d. Metallic Resonance and Tinkling.

3. The Heart.

a. Extent of Pulsation ;

b. Impulse or shock ;

c. The sound. This may be duller, more distinct, or louder than natural. Sounds may also be produced, altogether foreign to the healthy state of the organ. The principal of these are—

aa. The sound of bellows—or hissing sound. This may be either continuous or intermittent. It is considered

by Laennec as always dependent on *spasm* or other temporary partial obstruction of the organs of circulation.

bb. The sound of the rasp or file. This is permanent, and depends on permanent material obstruction, existing in some of the orifices of the heart.

cc. The sound of new-leather (*craquement du cuir neuf*). This (new) sound has been observed only three times. In one case by Dr. Collin, it was noticed during the first six days of a Pericarditis, and disappeared when the other symptoms announced the supervention of a copious effusion into the pericardium. It was observed twice by M. Devilliers. The first case was considered to be one of Pericarditis; the other certainly was so; as, on examination after death, the pericardium was found invested by thick false membranes, and numerous vegetations, but with few adhesions, and containing not a drop of fluid. "Perhaps this sound may be a constant symptom of Pericarditis without effusion, or before the supervention of effusion." *Collin.*

d. Rythm.

aa. Relative duration of the ventricular and auricular contractions.

bb. Relative succession of the same.

A very long intermission, occurring after a regular series of pulsations, in an adult;—and a continued state of such quickness and irregularity of contraction, as defies analysis,—are certain signs of organic affection.

CHAP. IV.—MENSURATION.

This mode of exploration consists in the comparative admeasurement of the two sides of the chest, by means of a cord or piece of tape, transversely from the spine to the sternum. This furnishes, in certain cases, valuable assistance in fixing our diagnosis; but is never sufficient in itself to do so. It indicates only two conditions of the chest—viz. Dilatation and Contraction. Dilatation is always ac-

accompanied by elevation of the ribs, enlargement of the intercostal spaces, and immobility of the affected part, more or less complete, according as the dilatation occupies the whole side or only a part of it. Every considerable effusion into the cavity of the pleura occasions dilatation.

Contraction may be, also, general or partial; but it affects the whole side more frequently than dilatation. In this, the ribs are more oblique, little or not at all moveable, and the intercostal spaces diminished, sometimes nearly obliterated. This morbid affection is always the consequence of previous pleurisy. [For a more complete account of both these conditions of the chest, see Laennec. T.]

CHAP. V.—SUCCUSSIO.

Hippocrates is considered as the author of this mode of exploration, which consists, simply, in shaking the trunk, smartly and quickly, with the view of producing the sound of fluctuation, in the case of an accumulation of a fluid in the chest. This sound can only exist when both air and a liquid are contained in the thorax;—and only in certain relative proportions of each of these. The sound arising from this cannot be confounded with any other. [See Laennec, for a complete view of this also. T.]

[To render complete this view of the *Physical Diagnostics* of diseases of the chest, the author ought to have given some account of *Abdominal Pressure*, originally proposed by Richat; and of the mode of ascertaining the capacity of the lungs, recommended by Mr. Abernethy, by measuring the volume of the expired air, after a full inspiration. The former of these, I consider as of very inferior value, and indeed as extremely fallacious; but the proposal of Mr. Abernethy must be considered as highly ingenious and important, and as meriting much more attention than it has hitherto received. Indeed, I am disposed to give it the next place, after Auscultation and Percussion. I subjoin

a brief notice of both these measures,—extracting the account of Mr. Abernethy's proposal, from Dr. Young's *Treatise on Consumption*;—and that of Bichat's, from M. Roux's memoir, published in the third volume of Desault's *Chirurgical works* (Paris, 1803.) as translated in Vol. iv of the *Med. Chir. Review*.

CHAP. VI. PULMOMETRY,—OR MEASUREMENT OF THE
CAPACITY OF THE LUNGS.

‘The degree, in which the actual mechanical obstruction of the lungs has taken place, may be discovered by means of a test, which was some years since proposed by Mr. Abernethy; its object is to measure the capacity of the remaining cavity of the chest, by means of a pneumatic apparatus. Inverting a large jar, filled with water, in a bason, the patient makes a deep inspiration, and blows into the jar through a bent tube: the height of the water remaining in the jar is then marked; and by filling the bottom of the jar up to the height of the mark, and measuring the fluid contained in it, we may easily ascertain the quantity of air which has been expired: this, in a healthy person, should be from six to eight quarts; and if it is only one or two we may be sure that the lungs, or some other part concerned in respiration, are materially diseased.’

CHAP. VII. ABDOMINAL PRESSURE.

‘The idea of abdominal pressure was suggested to Bichat by a remark which physicians have long since made. It was observed that patients, suffering from hydrothorax, aneurism of the heart, and other organic lesions of the thorax, experienced a degree of uneasiness amounting to suffocation, whenever the stomach became distended. Hence this symptom was considered as one in the series, essentially attendant upon those diseases.

If any other circumstance contribute to produce this phenomenon, it must principally arise from the mechanical

distension of the abdominal parietes, and from the contraction of the thorax by the elevation of the diaphragm. Now, to effect this elevation in a prompt manner, by compressing from below upwards the epigastrium or hypochondria, according to the seat of the affection which is the object of our research; to watch attentively the effect produced upon the patient; and to apply the result of this manual experiment, in order to acquire a certainty of the existence of any particular disease;—in this consists abdominal pressure, as a new means of aiding the diagnosis of thoracic maladies.

It produces the painful, suffocative feeling, in peripneumony, copious effusion into the chest, when applied beneath the short ribs; and in Dilatation of the heart, Pericarditis &c. when made in the præcordia: it is not productive of any results in pleurisy with slight effusion, Phthisis, &c.

Beside the forgoing, there are still a few other measures which ought to be included in a treatise on the Physical Diagnosis of diseases of the Chest. I shall not, however, enter further upon this subject at present. T.]

PART SECOND.

The different methods of exploration detailed in Part First, are all of real value, and each of them, as we shall find, is occasionally useful in furnishing particular signs. In most cases, indeed, their combined employment is necessary; as, if we confined ourselves to any one, even the most perfect, we should be liable to frequent mistakes. In point of utility I would rank them as follows: 1. Auscultation; 2. Percussion; 3. Succussion; 4. Mensuration; 5. Inspection of the thoracic motions.

DISEASES OF THE ORGANS OF RESPIRATION.

A. Recognised by the exploration of the Respiration only.

I.—PLEURODYNE.

This is a disease of little importance, yet it may be mistaken for a severe affection of the lungs or pleura.—When the muscular pain is great, the ribs of the part affected remain fixed during respiration, which becomes, therefore, more or less incomplete. Percussion gives a dull or obscure sound,—either because the pained muscles do not admit of being stretched, or because the affected part is really swollen. The sound of respiration is likewise feeble, or altogether wanting, over a greater or less extent of the affected side. These are also the symptoms of pleurisy and peripneumony; and for the distinction between them and it, see the two former diseases. (Art. VI. and VIII.)

II.—PULMONARY CATARRH.

The inspection of the thoracic movements affords, in this case, but little aid: the respiration is frequent, quick, small, unequal, irregular; but these characters belong to many other diseases. They may, however, assist us in forming our judgment as to the severity of the Catarrh.

The sound on percussion is natural,—even in the severer cases. Mensuration and Succussion are equally without results. The Stethoscope, however, furnishes us with signs truly pathognomonic. These vary according to the species of the disease. In the *dry* Catarrh, the respiration is found to be feeble, or even wanting in different parts, of a greater or less extent; but this state varies extremely and constantly;—so that we shall find the respiration become obscure in the points where it was distinct, and vice versa, during the space of a short examination. This state of respiration is most commonly accompanied by a sonorous or sibilous rattle: the former being pretty constant, the latter very variable,—disappearing for a longer or shorter

period, after coughing, or without any obvious cause, and returning suddenly, with an increased or diminished force. Sometimes, however, when the catarrh is extensive and severe, both species of rattle are constant, strongly-marked, and diffused over the greater part of the chest.

In the *moist* Catarrh, the same phenomena may exist, but they are usually complicated with the mucous rattle; or this species may exist singly, and suffices, in itself, to characterise the disease. This rattle is more constant than the sibilous: it presents varieties as to strength, frequency, and extent, which serve to indicate different degrees of the affection. Pulmonary Catarrh may readily be confounded with Emphysema of the lungs, and with Phthisis. (See *Emphysema*, and *Phthisis*.)

III.—PULMONARY APOPLEXY.

The invasion of this disease is usually sudden. There is great dyspnœa; the motions of the chest are extremely quick and irregular, unequal, intermittent; the dyspnœa amounts to *orthopnœa*; the patient feels as if about to be suffocated, and betrays the greatest anxiety. Percussion, nevertheless, still gives the natural sound. Auscultation, however, detects considerable alteration in the state of the respiration. The crepitous rattle is perceived in different points, which are circumscribed; and in the spaces between these, the respiration is still perfect, and sometimes even puerile. After a certain time, this rattle is succeeded by an abundant mucous rattle (with large bubbles), which soon extends over the whole of the lobe or lung affected, indicating the copious effusion of blood into the air cells and bronchia, which is soon made more manifest by the bloody sputa. In the second stage of this disease, the sound, on percussion, becomes sometimes obscure.

In the first stage, Pulmonary Apoplexy may be mistaken for incipient peripneumony; in the second,—if not

very acute and the hæmoptysis is not constant, it may be confounded with Catarrh. The distinctive marks, in these cases, must be taken from the history and general symptoms.

IV.—ŒDEMA OF THE LUNGS.

Respiration always complete; usually difficult and laborious, and amounting at times to orthopnœa; not frequent.

Sound on percussion, natural or obscure, but equally so on both sides,—as the disease rarely occupies one side only.

Sound of respiration (by Stethoscope) indistinct,—masked, over almost all the chest, but especially on the back and lower parts,—by a permanent sub-crepitous rattle, of different intensity; respiration sometimes puerile over a small extent of the upper lobes.

This disease is recognised with facility when existing in a high degree; with difficulty, if slight; and not to be recognised, if complicated with peripneumony or emphysema. It may be confounded with peripneumony. (See *Peripneumony*.) The kind of rattle, and the general symptoms distinguish it from Catarrh.

V.—EMPHYSEMA OF THE LUNGS.

This is one of the diseases usually confounded under the general name of Asthma, and is marked by an habitual state of dyspnœa, aggravated by irregular paroxysms of greater severity.

The motions of the chest are, in this disease, extensive, and habitually unequal, the inspirations being commonly short, rapid, quick, and the expirations long, measured and incomplete,—constituting the *interrupted* respiration.

Percussion elicits a much clearer sound than natural, whatever be the fatness of the individual; but this louder sound is not general over the chest, as the disease seldom

occupies the whole of one lung. If the disease extends to both lungs, it is difficult to judge of the degree of augmentation of sound ; and, on the other hand, when it is confined to one side, the augmentation of sound becomes a fallacious sign, requiring the aid of Mediate Auscultation to fix its true value. The *Stethoscope* detects the sound of respiration to be either very feeble or altogether wanting, over the parts affected by the emphysema ; but there is heard a slight sibilous or sonorous rattle during a deep inspiration, and sometimes in expiration. The contrast of the loud sound on percussion, with the diminution or absence of the natural respiratory sound, constitutes the characteristic sign of this disease.

When the disease is of long standing and very extensive, *Mensuration* shows dilatation of the affected side ; or, if both sides are affected, the chest is observed to be almost cylindrical, being rounded both before and behind.

This disease may be confounded with Catarrh, and Pneumo-Thorax unattended by a liquid effusion. The following marks distinguish it from Catarrh :—In Catarrh, the suspension of the sound of respiration is only of short duration in any one point, and its return is sometimes accompanied by a loud, even puerile respiration ; and a rattle is generally present : In Emphysema, the suspension of the respiration is much longer, sometimes permanent, and when it returns it is still feebler than natural, particularly if the disease is of old date ; the sibilous rattle is rarely present, while the sonorous, imitating the cooing of the wood-pigeon, is constant ;—and this scarcely ever happens in simple Catarrh. In Catarrh, the motion of the ribs is free ; the respiration is not constantly unequal ; and the chest retains its natural shape, and sound on percussion : In Emphysema, one side is often less mobile : inspiration is always very

short relatively to expiration ; the chest is dilated, and with a tympanitic resonance.

All the other diseases of the chest, except Pneumo-Thorax (See this, Art. XI.) in which the sound of respiration is less than natural, are at once distinguished from Emphysema, by Percussion.

VI.—PERIPNEUMONY.

This disease is divided into three stages. (See Laennec). In the first, the respiration is high, small, frequent, incomplete, unequal, difficult, sometimes laborious ; and it becomes abdominal if both sides of the chest are much affected. *Percussion*, in this stage, gives sometimes the natural sound ; but more commonly this is obscure, or altogether lost, over a greater or less space, according to the extent of the lung affected. The *Stethoscope* gives, over the whole space sounding dull on percussion, a respiration that is feeble, more or less indistinct, or entirely drowned by a crepitous rattle, which is sometimes dull, sometimes loud : the respiration at the same time becomes frequently puerile in the sound lung, or in the sound parts of the one affected.

These phenomena speedily change. If the disease terminates in resolution, the crepitous rattle diminishes in intensity daily, and the respiration becomes gradually more natural ; the motions of the chest recover their natural regularity and extent ; the natural sound on percussion reappears ; and a mucous rattle announces the expectoration. On the other hand, if hepatization supervenes, the unnatural motions of the chest continue,—the sound on percussion becomes completely obscured,—the crepitous rattle ceases, but the natural sound of respiration does not return ; on the contrary, this is entirely lost, or is only heard in the vicinity of the larger bronchial tubes, where it is *tracheal*, and

often very strong. At the same time, the resonance of the voice is increased over all the part affected, and occasionally so much so, as to amount to perfect pectoriloquism on the superior lobe.

When the disease is not very extensive, even in this stage it is frequently cured, and presents in its progress to resolution, the phenomena already enumerated, but in an inverse order. But, if it proceeds to suppuration, the movements of the chest become smaller, feebler, and more difficult; the sound remains obscure; a mucous, terminating in a gurgling rattle develops itself, and, when the pus has effected a communication with the bronchia, pectoriloquism is finally established.

From the preceding statements it will appear, that if we have seen and attended to this disease from the beginning, it is easy to ascertain the actual condition of the lungs. This is by no means so easy however, if we do not see the patient until the second stage, when the lung is already hepatized. In this case, we indeed find that a certain number of ribs are immoveable, that percussion gives the dull-sound, and the Stethoscope gives no indication of respiration;—but these are also the very symptoms of Hydrothorax and Empyema. Under such circumstances therefore, the modes of exploration detailed are insufficient to afford a certain diagnosis; and to attain this, we must rely on the *signa anamnestica*,—the previous history and progress of the case. In the third stage of peripneumony, when suppuration has been established, it is not always easy to distinguish the disease from phthisis. The expectoration affords some assistance; but by no means enough. The same remarks apply to the disease in a chronic state.

Peripneumony is distinguished from *Pleurodyne*, by the crepitous rattle in the first stage; by the loss of the natural sound and respiration, in the second; and by the loss of

sound, the mucous rattle, and pectoriloquism, in the third. It is distinguished from *Pulmonary Apoplexy* by the following signs: In the latter the respiration is always complete, while it is usually incomplete in peripneumony. In Peripneumony, the sound on percussion is always more or less obscure, commonly altogether dull, in the first stage, when the crepitous rattle exists; while it remains distinct in the first stage of Pulmonary Apoplexy. The crepitous rattle is seldom general (*disseminé*) in peripneumony, which it commonly is in Pulmonary Apoplexy; and in the latter, the mucous rattle rapidly follows the crepitous, which is not the case in peripneumony,—there being, in this disease, an interval of *no-respiration* between the cessation of the crepitous, and the commencement of the mucous rattle.

The same remarks apply to Odema of the Lungs.

VII.—EMPYEMA AND HYDROTHORAX.

These have the same signs; for which see the next Article. (VIII.)

B. Recognised by the exploration of the respiration and the voice.

VIII.—PLEURISY.

The signs of this affection vary according to the stage. In the earliest stage, that is, before the effusion of either serum or lymph, the motions of the affected side are enfeebled or almost extinguished,—the ribs corresponding with the diseased part remaining fixed, while the rest are moveable. The respiration is frequent, especially if both sides, are diseased, quick (*vive*) during inspiration, slow during expiration, interrupted, irregular. This state of the respiration continues through the whole acute stage. Percussion is painful, but gives the same results as in health. The respiratory sound is enfeebled but pure, if the disease is uncomplicated. The Chest retains its natural capacity on Mensuration.—The same symptoms exist in pleurodyne, which can only be distinguished from incipient pleurisy by the general symptoms.

When the effusion has taken place, but in no very considerable degree, the sound (on percussion) becomes obscure, usually on the lateral and posterior-inferior parts, or on any other point of the chest, if the disease is partial, or the effusion confined by previous adhesions. The stethoscope indicates either no-respiration, or a respiration barely perceptible over the parts yielding the preternatural sound; but shows it to be occasionally puerile over the superior parts of the chest: it also detects hægophonism, in the vicinity of the scapula, under the clavicle, or in any other part, according to the place or extent of the effusion. If the effusion is very considerable from the beginning, or becomes so in the course of the disease, the sound on percussion is altogether fleshy; hægophonism disappears; and the respiratory sound is entirely lost, except in such instances as the lungs are partially retained in contact with the side, by antient adhesions. The intercostal spaces are enlarged, and rise to the level of the ribs; these become more erect (*redressés*); the whole side is found to be larger, on mensuration; it is seen to be immoveable, and forms a marked contrast with the sound side, which is even more mobile than natural: over the sound side the respiration becomes puerile.

If absorption takes place, hægophonism re-appears when the fluid is diminished to the necessary proportion, decreases gradually as the effusion lessens, and finally disappears with it. Percussion, however, still gives for a long time, the preternatural sound, and the stethoscope indicates very feeble, or no respiration; the intercostal spaces become flattened, and the whole side loses for ever its original size and mobility. The sound on percussion is not increased, nor does the cylinder show any considerable force in the respiration, until after the organization of the false membranes.

No other disease, except incipient Hydrothorax, can be confounded with pleurisy, as long as Hægophonism exists: this sign is quite pathognomonic of one or other of these affections, which, however, can be distinguished from each other, by their local and general symptoms. But when the effusion is abundant, and the disease has passed into the chronic state, if we have not witnessed the whole course of the affection we may mistake pleurisy for hydrothorax or chronic peripneumony, and vice versa. In such cases, we must trust to the general symptoms, and the *anamnestic signs*, for establishing our diagnosis. And this is a matter of no small importance, in as much as we can do little or nothing in the case of chronic pleurisy, while we have still powerful and efficacious resources against hydrothorax and chronic peripneumony. The operation of paracentesis, the only means left for the relief of chronic pleurisy, would no doubt be more successful, if practiced at an earlier stage. I think it hardly possible to confound chronic pleurisy with phthisis; and do not consider it difficult, in general, to discriminate these when co-existing.

The distinction between pleurisy and pleurodyne, is easy. In pleurisy with a moderate degree of effusion, we have hægophonism;—with copious effusion, dilatation: neither of which exists in pleurodyne. At all events, the mistake, if it occurs, can never be of long duration.

IX. PHTHISIS PULMONALIS.

For the sake of clearness, we divide this disease into three periods, although, it must be allowed that nature rarely exhibits these: 1. The incipient, where the tubercles are only few in number; 2. The second, where the tubercles are sufficiently numerous to obstruct, more or less, the parts of the lungs where they exist; and, 3. The confirmed, when the tubercles have been softened or evacuated.

In the first stage, our physical diagnostics give us

no assistance. In the second stage, the upper part of the lung on one side frequently yields a more or less obscure sound on percussion, and a greater or less diminution of the respiration, by the Stethoscope; and the latter also detects a superior resonance of the voice in the same part: But these signs are only valuable when they are permanent, and confined to one side. In the third stage, we have a certain but ominous pathognomonic, in the sign of pectoriloquism.

Chronic Catarrh can only be distinguished from Phthisis by Pectoriloquism, or the signs which I have given as indicating the agglomeration of tubercles; but these latter signs will not always prevent phthisis from being confounded with peripneumony, acute or chronic, of the upper lobe, even when we have the additional assistance of the expectation, and the general symptoms.—Percussion, the general symptoms, and the history of the case, will readily distinguish Phthisis from Emphysema. In the rare affection, Dilatation of the Bronchia, in which pectoriloquism exists, time and the progress of the disease can alone prevent us from mistaking the case for Phthisis, and these not always.

X. GANGRENE OF THE LUNGS

This disease may commonly, be recognised; but it has no physical characteristics.

XI. PNEUMO-THORAX.

This disease may exist with or without an accompanying liquid effusion in the chest; and either of these states may exist with or without a communication with the bronchia.

In simple Pneumo-thorax, without bronchial fistula, the morbid alteration in the motions of the chest, is the same as in the case of Emphysema,—and sometimes in even a more marked degree. The affected side yields on Per-

cussion, a hollow tympanitic sound, even when the thoracic parietes are thick. When the lung happens to be attached to the side, by old adhesions, the sound may be nearly natural in these points. The Stethoscope gives no respiratory sound over the whole space occupied by the gaseous effusion; and this is scarcely perceptible over the roots of the lungs, between the scapula and spine.* The affected side, or part, is commonly dilated, and otherwise resembles externally the cases of Emphysema.

When the gaseous accumulation communicates with the bronchia,—to the foregoing signs, there is added another which is quite pathognomonic,—viz.—*the metallic resonance and respiration*.

In the case of gaseous and liquid effusion at the same time, and without bronchial fistula,—to the foregoing signs are superadded, the *metallic tinkling*, and the sound of fluctuation or Succussion of the chest. In the same complication as to effusion, but without the fistula, there are present the metallic tinkling and the sound of fluctuation,—but not the metallic resonance and respiration.

In the case of gaseous and liquid effusion at the same time, percussion gives a loud sound on the superior parts, and one quite dull on the inferior; and the relative places of sound and dulness, vary relatively with the position of the patient's trunk.

Percussion will also distinguish this from all the other diseases in which the stethoscope detects no respiration over a considerable space, and during a considerable length of time. Emphysema is the only affection with which it can be confounded: But in Emphysema,—the chest has seldom the very great resonance that exists in pneumothorax;

* This want of the respiratory sound is owing to two causes: 1. The removal from the side, of the lung by the effused air, and 2. The bad conducting power for sound possessed by gaseous bodies.

the respiration is never completely imperceptible, being always good at the roots of the lungs, at least ; it is, moreover, in Emphysema accompanied by different rattles, and often returns quickly in places, where it had become imperceptible ;—which is never the case in Pneumothorax.

DISEASES OF THE HEART.

A. Diseases characterised by a change in the impulse.

I.—HYPERTROPHIA.

This disease does not occasion any peculiar modification of the thoracic movements. Those which are observed, depend on the state of the lungs, which soon suffer in this disease,—and commonly consist in an habitual dyspnœa, with paroxysmal aggravations, amounting, especially in the latter stage, to orthopnœa. Percussion seldom gives any results ; occasionally, however, when the disease exists in a great degree, the sound becomes obscure or dull in the cardiac region. The stethoscope furnishes more certain and constant signs. The contraction of the ventricles gives a strong impulse without sound, prolonged in proportion as the hypertrophia is great, and often confined to a smaller space than in the sound state of the organ. Sometimes the pulsations are irregular, intermitting ; more commonly, however there is no other alteration in the rythm, except the prolongation of the ventricular contractions. The contraction of the auricles begins before that of the ventricles is finished,—being short, accompanied by little sound, and, on this account, difficultly perceived.

These phenomena are perfectly distinct in every case, at least, as long as the respiration is not much altered from the natural state : but if the dyspnœa becomes extreme, they often cease to be perceived, but return when the respiration is quiet.

1. *Hypertrophia of the left ventricle.* If the left ventricle is alone thickened, the signs above enumerated will

be observed only between the fifth and seventh ribs of the left side; and the exploration of the lower part of the sternum will evince the integrity of the right ventricle.

2. *Hypertrophia of the right ventricle.* The same symptoms nearly, but reversed as to position, exist in this case. The sound of the ventricular contractions is still dull but never so much so as in the affection of the left ventricle.

The comparison of the two ventricles, which may always be readily made, gives us much facility and certainty in the diagnosis of this disease.

B. Diseases characterised by a change in the sound.

II.—DILATATION OF THE HEART.

The same state of the respiration as in hypertrophia, but in a less degree, and less paroxysmal, exists in this disease. The more distinctive signs are the following: Percussion gives sometimes a somewhat obscure sound in the cardiac region; the contraction of the ventricles is sonorous and with a slight impulse; the sound is extensively diffused, and in a degree proportioned to the dilatation. This disease rarely affects both ventricles at once; and more frequently the right than the left. The particular place in which the sound is most distinctly heard, points out which ventricle is affected.

Sometimes one side of the heart is hypertrophied and the other dilated. In this case, we have the signs of dilatation on the one side, and of hypertrophia on the other.

C. Diseases characterised by a change both in the impulse and sound.

III. DILATATION WITH HYPERTROPHIA OF THE HEART.

The signs of this disease are composed of those of each of the affections of which it consists. The ventricular contractions give, at once, a strong impulse and a loud sound; the contractions of the auricles are sonorous; the sound of the heart is very extensive; and even the impulse is felt over

the greater part of the chest, in the case of thin persons and children. The action of the heart is felt distinctly by the hand, and produces a perceptible elevation of the parietes of the chest. The rythm is rarely altered. Percussion in this case, gives most commonly the preternatural sound in the cardiac region. If only one half of the organ is diseased the site of the phenomena will indicate the particular part affected.

IV.—CONTRACTION OF THE ORIFICES OF THE HEART.

The signs of this affection are according to Laennec, the peculiar sounds denominated from their resemblance to those produced by the action of *bellows*, or a *rasp* on wood. The moment of time, in the series of the heart's actions, at which the particular sound is perceived, will point out the particular orifice affected: thus in the degeneration of the mitral, the morbid sound accompanies the contraction of the auricle; and in that of the arterial outlets, it accompanies the contraction of the ventricles. This state of the orifices commonly occasions hypertrophia of the part whose action is interrupted; in which case, of course, the signs of this latter affection are superadded to the others.

V.—SOFTENING OF THE HEART.

This state is indicated when both contractions yield an obtuse and slight sound, and little or no impulse. When softening is complicated with dilatation, the sound may be loud,—but it is always dull, and without the usual clear tone of simple dilatation: when complicated with hypertrophia the sound is so obtuse as to be hardly at all perceptible.

VI.—ANEURISM OF THE AORTA.

The signs of this are very uncertain. (See Laennec.)

VII. PERICARDITIS.

Laennec gives as signs of this affection,—a more marked sound and impulse, inequality of the ventricular contractions, and the disproportions of these to the weakness and

smallness of the pulse. Perhaps the sound which I have compared to that of *new leather* is a sign of this disease before effusion.

VIII.—HYDROPERICARDIUM.

This may be suspected from the following symptoms : complete dulness of sound on percussion in the cardiac region ; pulsations of the heart tumultuous and obscure, perceptible over a great extent, occasionally more in one point than another ;—and as if conveyed to the hand through a soft body.

FINIS.

EXPLANATION OF THE PLATES.

PLATE I.

Fig 1. The Stethoscope or Cylinder, reduced to one third its actual dimensions.

- a.* The Stopper.
- b.* The lower end.
- c.* The upper half.
- d.* The auricular or upper extremity.

Fig. 2. Longitudinal section of the same.

- a.* The stopper.
- b.* Point of union of the two parts.
- c.* The upper half.

Fig. 3. The same section, with the stopper removed.

Fig. 4. The stopper.

a. The body of it, formed of the same wood as the rest of the instrument.

b. Small brass tube traversing the stopper, for fixing it in the tube of the stethoscope.*

* The brass tube is unnecessary—as the whole may be turned in the wood.

EXPLANATION OF THE PLATES.

Fig. 5. Upper half of the stethoscope.

- a.* Body of it.
- b.* Screw (in the wood) for fixing the two portions together.
- a.* Diameter of the canal of the stethoscope.

Fig 6. Actual diameter of the stethoscope.

N. B. Any turner will be able to make the instrument, from the above descriptions.

PLATE II.

This figure exhibits the effects of contraction of the chest consequent on pleurisy.

- a.* The sound side.
- b.* The contracted side.

PLATE III.

A back view of the same subject.

These Plates are taken from M. Laennec's treatise ; but they are introduced here as being exactly applicable to the state of the Chest described in Case xxix. p. 237 of this volume.

Fig. 1.



Fig. 2.



Fig. 3.



Fig. 4.



Fig. 5.



Fig. 6.







